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EDITORIAL.

EUROPEAN CHRONICLES.

THE HACKNEY HORSE.—At this time when the hackney seems to be the fashionable horse in the United States, the true origin of the name may be of some value to those of our readers who are interested in zoötechny.

The name *hackney* is of French origin. In times gone by, some horses used for some special purpose were known in France as *haquet*, *haquenée*, the latter being a lady's saddle horse and corresponding to what was called in England the *nag*, *pad*, or lady's horse; and when the Normans came to England they applied the name of their own French *haquenée* to the *nag* or *pad*; one became synonymous of the other.

But what is considered a perfect hackney to-day is far from the original haquenée or nag; crossing and improvements in breeding have changed the character of his predecessors, of his godfather, and if we can believe the description that Prof. A. Reul gives in the *Annales de Belgique*, the true hackney of to-day possesses very little of the character of the French haquenée or of the true English nag. Indeed, according to Prof. Reul, the following is the character of a perfect hackney:

"Not of large size, those of 15 hands high are not rare; its head must be small, short, well carried, with kind and energetic features; the forehead wide, the face rather narrow, but in proportion to the size of the nasal cavities; the eye large, the ear short and active; the neck of average length, with well developed muscles, high above and slightly arching. The back straight, well muscled, especially to the loins and croup. The withers high, clean and bony; shoulder long and in good

direction; the arm and leg of good length in proportion with the canon bones, the muscles of the thigh and croup well developed. All the articulations must be wide, well developed and supple in proportion with their resisting power to the violent efforts they must support."

In conclusion of this description, Prof. Reul says:

"Whatever may be the anatomical beauty of a hackney, its great value remains in the brilliancy of its gait; he must know how to handle his legs (lever la patte) and carry them in all their extension; he must, so to speak, trot in the air; his most curious aptitude is to go faster trotting than galloping. He has two excellent gaits, walking and trotting; galloping is hard to him, and he only takes it under pressure, and when he has lost control of himself."

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THE USE OF ARECOLINE IN ACUTE LAMINITIS.—The many serious sequelæ that are so common after an attack of laminitis, the fact that in many instances they disable horses, and not uncommonly render them useless, have often justified the serious prognosis that has to be given when a veterinarian is called to attend an animal suffering with disease of one, two or four extremities; and if one looks over the therapeutics recommended to control the inflammation, to prevent the complications, the deformities that may follow; if he is embarrassed, it is not for the want of forms of treatment, but in the selection of the one which would be likely to bring him the best results, and that in the shortest time possible. For many it is the old general depletive treatment, for others the strong cathartics; for this one the diuretics, for that one the diaphoretics; one will ignore local treatment, another will direct his attention to the feet almost exclusively; and with any, no matter how carefully the treatment is applied, complications are not impossible. Even with the simple form which we believe is altogether of American birth, that of the administration of large doses of nitrate of potassium, serious accidents have occurred.

The important fact in the result of the treatment is to subdue the inflammatory process at the earliest date, to control its effect, to hasten it rapidly and to avoid those modifications which have justified the divisions of the forms of the disease into acute, subacute (?) and chronic.

Although, according to Kauffmann, arecoline and its salts are powerful toxics, Fröhner some time ago recommended the use of bromhydrate in the treatment of laminitis, and in ten cases of laminitis forward and two of the four feet, all had recovered in an average treatment of six days. Later on Paimans, of Holland, recorded two cases with even shorter duration of treatment. A Belgian veterinarian has recently given his experience in eight cases, with the following results: (1st case) Laminitis of both fore legs, sick for four days, resumed work after six days; (2d) Laminitis both fore, sick for one day, to work five after; (3d) Same trouble, same condition, resumed work in same length of time; (4th) Disease had existed for a few days, resumed work after eleven days of treatment; (5th) Recent laminitis forward, recovery in three days; (6th) Laminitis of four extremities, convalescent in a few days, to work in thirteen; (7th) Disease of both fore, cured in six days; (8th) Disease of both fore, complicated with lameness behind, laminitis had existed for several days, resumed work, cured of both diseases in fifteen days.

The administration of the bromhydrate was made subcutaneously, 5 or 10 centigrams of the salt dissolved in 5 gramms of distilled water, one injection a day; the quantity of salt injected varied according to size of animal, 5 for small, 10 for large.

The advantage obtained by those who have already had recourse to that treatment cannot be ignored; perhaps other experiments are necessary to confirm them, but from what has already been done this new treatment deserves the attention of veterinarians.

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ANTISEPTIC VETERINARY SURGERY.—It is no longer necessary to preach the value of antisepsy in the treatment of surgical diseases, and, though its thorough application demands special conditions which may be difficult to obtain in private practice, there are many conditions where even with imperfect appplication it has given results which would have been otherwise had not antiseptic measures been resorted to.

The application of antisepsy is considered in European veterinary schools as thoroughly, we would dare to say, as it is in cases of human surgery, and it has been recently our good fortune to see its application at the clinics of Alfort, in a case of foot disease, and of deep needle firing by Prof. Cadiot. But of all those who, so far, have recorded the results obtained in veterinary surgery by antisepsy and of its possibilities in almost any operation, there are probably none who have done as much as Prof. Lanzillotti-Buonsanti, of the Royal Veterinary School of Milan.

We have already presented to the readers of the REVIEW many incidents of the great clinic of Milan, whose records we have extracted from the *Clinica Veterinaria*, and our friends are already familiar with the results obtained. Lately Prof. Buonsanti has issued the results he has obtained in the treatment of that bug-bear affection, fistulous withers. It is true that following the rules laid out by many daring surgeons, viz., cutting freely down to the seat of the disease, removing all infiltrated structures, scraping and curetting until all possibility of new necrosis, collection of pus or reformation of fistulous tracts be removed—thus far old surgery went, but the new demands resort to the antiseptic washing, the application of drainage tubes to permit the escape of pus and the antiseptic irrigations, and by appropriate suturing and dressing it is possible to obtain cicatrization by first intention in from 20 to 26 days, or six weeks at the longest. Such are the results which old surgery but very seldom secured.

Antisepsy is certainly put into practise in large establishments, probably in private hospitals, but we fear that individual practitioners, careless of the interests of their employers—of their own, in fact, and of the results they would obtain, neglect to apply it, and thus lose the benefit they would gain by it.

A REAL VETERINARY ARMY SERVICE.

"Everything comes to those who wait," is a somewhat distorted quotation of an axiom which has more often proven true

than false; and if our faith in the old adage is to continue, order is almost certain to come out of the chaotic condition of army veterinary matters, for we have waited long for a glimmer of the light of a glorious fruition. The veterinarian who feels pride in the great estate to which the true profession has arrived in the few short years it has existed upon this side of the Atlantic, could not but be contented were it not for the thorn which keeps piercing his side whenever he reflects that this wise and progressive government is the last to place upon its brow the wreath of approval and support. No, not this great government, but just one department of it, for surely the Department of Agriculture has reaped grand results from its recognition of the value of veterinary services, just as the veterinary profession has profited by the patronizing graces of this branch of the government. But, the War Department has ever turned a deaf ear to the appeals of the profession, and been blind to its own necessities. Possibly much has been due to the need of reorganization of the army upon a broader, more liberal and up-to-date basis. Now, that a real, though short and more distinctly naval than military, war has opened the eyes of Americans to the inadequacy of its standing army, there is already an expressed intention of maintaining a force of a hundred thousand men, divided between infantry and cavalry. This will mean reorganization thorough and complete, and surely no real reform in this direction can be seriously considered which omits the establishment of a veterinary department. The time is then fast approaching when we are to take our proper place in the army just as we have occupied it in every other progressive nation of the world for years and years. In the present issue of the REVIEW this subject is very thoroughly gone over by one who is peculiarly competent to speak upon it, one who has labored along these lines for years, and who draws his conclusions, not from theoretical reasoning, but from long experience and intelligent observation, not only in the United States, but in some of the leading Continental armies. Prof. Olof Schwarzkopf writes upon a subject which has been with him a passion, and we re-

spect his conclusions as those of a man who has viewed the subject from every standpoint, and has weighed every condition of the scheme which he presents. He believes that, so far as any permanent good to the army and the profession goes, the bill which we have been for years urging upon Congress, is unworthy of us, and that it meets opposition largely through its own unworthiness. But, showing as he does the lack of professional supervision in army affairs to have resulted in great pecuniary loss to the country and needless suffering to the noblest of man's servants, his suggestions to create a department in the proposed reorganization which shall include more than the mere treatment of sick and disabled animals, thus establishing a great economic department, extending its intelligent supervision over all related interests, must command the interest and co-operative support of the War Department and the Congress.

The REVIEW believes that the time has come when united exertion upon a broad and liberal basis will bring to the profession honorable recognition and a dignified position in this important service, which will demonstrate to the country that the proper encouragement of this science in its practical application to the requirements of the War Department in peace and in war will yield the best results from every view point—efficiency to the service, economy to the treasury, humanity to the beast, and justice to a noble profession.

AS TO THE GOVERNOR OF ILLINOIS.

When a little over a year ago we denounced Governor Tanner for his ignorant assault upon the veterinary profession by his refusal to select one out of a dozen or more of her worthy members for the important position of State Veterinarian of the great commonwealth over whose destinies he had just been elected to preside for four long years, and the direct insult to them and the people of his State which he offered when he selected for that position a man totally unfit by education or training, we anticipated the character of the man who

could be guilty of such a barbarous and almost criminal act. His recent action in the case of the strikers has shown that our estimate of him was almost prophetic, and he is being lashed by the press of the country as he deserves. The only reason he was honored by election was that his opponent, Altgeld, was presumed to be more degenerate, but recent events have shown that he is even a worse enemy of law, order and society than his socialistic competitor. If impeachment does not remove him earlier, the veterinarians of Illinois may rest assured that when his term is over no more Governors of that class will ever again disgrace the State and retard scientific progress.

OUR E. C., the *Journal of Comparative Medicine, etc.*, appears to be in a distressingly perturbed state of mind whereever REVIEW collaborators are concerned. In its August issue it spat upon our valued co-worker, Prof. Williams, and in its rather tardy October nnmber Dr. Schwarzkopf comes in for his share of its vituperation. What's the matter with the erstwhile appreciative *Journal?* which was once wont to applaud the original efforts of those of our profession who are doing a noble work in building up the literature of this new science in America. We trust that, for the good of the profession, it is not a case of editorial *ennui*, for we cannot afford to lose the enthusiastic support so unstintingly given by it for the past few years, during which period it has unceasingly declared that it "Leads Veterinary Journalism in America." The question uppermost is as to the direction, and this involves a further consideration as to whether we can afford to follow our generous leader.

OUR ESTEEMED CORRESPONDENT, Dr. Francis Abele, of Quincy, Mass., to whom the REVIEW and its readers are under great obligations for frequent and very interesting reports of cases occurring in his practice, contributes this month one in which he figures as hero and victim, and exhibits a degree of coolness in the face of real or fancied danger which may prove the best antidote to the development of poisonous germs in his

system. We believe from his recital of the incident, together with the postscript, that the precaution of preventive treatment should be at once adopted; but trust in any event that nothing more serious than an exciting experience may result.

ORIGINAL ARTICLES.

PARTURIENT PARESIS.

(THE SO-CALLED CALVING-FEVER OR PARTURIENT APOPLEXY.)

STUDIES AND INVESTIGATIONS INTO ITS CAUSE AND HANDLING.

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Translated for the American Veterinary Review, by W. L. Williams, *New York State Veterinary College.*

(*Continued from page 530.*)

No. 1. The first patient came under my care March 29, 1896. She was a well nourished, very good milk cow, above medium size, 8 years old. She had calved 24 hours before the development of the disease and came under my care a few hours after the beginning of the affection. She had given sufficient milk after calving; after the outbreak of the disease she had been bled.

The cow could not rise, and lay most of the time with her head bent to her side; the expression was somewhat listless although the patient was not wholly inattentive to her surroundings. The excrement in rectum was not hard, but covered with dark, dry crusts; temperature 38° C.

The condition in general was that of a patient suffering from an attack of medium severity shortly after the beginning, so that under ordinary handling she would be expected to become worse.

The infusion apparatus was laid in lysol water, the udder emptied by milking, and the teats cleaned by washing with soap and water and disinfected with lysol water. Five grammes potassium iodide were then dissolved in .75 liters of freshly sterilized water, the solution cooled to 40° C. and injected into the udder through each teat successively. The column of air which existed in the tube, was pressed into the mammæ along with the infusion, and several times during the injection the funnel became empty, through which at times more air was forced in. Then the udder was firmly kneaded with the hands, and partly through this, and partly by stroking from below upwards (massage) the solution, together with the included air, was made to penetrate as thoroughly as possible into all divisions of the milk ducts and into the lacteal acini. Milking the cow was forbidden. Internally an aloe powder was given. In addition

the cow was rubbed and covered with woolen blankets, and received clysters with the addition of common salt and oil every 2 to 3 hours. The handling occurred in the evening. It can be imagined that I awaited, with not a little interest news the next day regarding the course of the disease, as well as the outward effects of the treatment.

The cow had lain very quiet for some hours, had then lifted up her head and little by little assumed a more lively appearance. After 8 hours she was standing up and showed very fair appetite, yet the owner complained that 12 hours after the treatment the cow still gave no milk at all. At 16 hours, that is, 8 hours after convalescence, the milk secretion began again to show activity and when I inquired two days later regarding the milk flow and appearance of the cow, I was informed that the cow yielded abundant milk and that the milk had been quite normal throughout the interval.

This was indeed a hopeful beginning. That the cow recovered, to that I attached no weight, but that she became better moment after moment after the treatment, although in my judgment the case was taken in the progressive stage of the malady, that nevertheless she recovered in 8 hours, an unusually short time, and especially, *that the milk secretion could be reduced quite to zero*, these circumstances indicated strongly, that efficacy of treatment and an influence upon the course of the disease must have been attained; for all these conditions could not well be accidents. To this was added, that the infusion had not injured the udder and though the milk flow was somewhat smaller than usual during the first few days, yet this played only a subordinate rôle.

In the Danish Maanedsskrift fur Dryläger, Vol. IX, 7th number, I have recorded fairly detailed clinical notes on 50 patients. Since however it is a laborious task to read all these in their entirety I will limit myself here to quoting therefrom only a few examples, some followed by favorable, others with unfavorable results, and especially some cases in which the handling was varied.

In Nos. 2 to 8 it was the plan to fill the infusion apparatus with the pot. iod. solution, before the milk catheter was inserted into the teat, and also in that the funnel was always partly filled during the infusion so that the injection of air into the udder would be avoided. Besides, one of the patients received two liters of the pot. iod. infusion in the udder at one time. In two cows the solution, well mixed with milk, was milked out after a quarter of an hour, whereupon a like dose was repeated. In two other patients the treatment was repeated after 11 and 20 hours, because the patients at the end of these periods had not yet arisen.

No. 9. September 25, 1896. Medium sized red cow, aged 12 years, the best milker in the entire dairy. She had calved 48 hours before the first signs of illness were noted. She had yielded at first about 20 pounds (10 kilogrammes) of milk, later the calf had sucked. She was milked three times daily besides. Shortly prior to observation she had lain stretched out on one side, but she had been turned up on her sternum and blanketed. She was very comatose, alternately stretched the head straight out and bent it to the side, the eyes could be touched by the fingers without producing reaction. The tongue was badly paralyzed. Horns, ears, muzzle, the tongue tip, as well as the legs were very cold;

the temperature in the rectum was 36.8° C.; respiration stertorous; the udder was large and tense. In the rectum a little hard crust-like fæces had accumulated. The os uteri was almost closed, three fingers could, however, pass through. The calf was healthy. Ten grammes (150 grains) of pot. iod. were injected into the udder at one time. Since in patient No. 1, some atmospheric air was caused to flow into the udder along with the pot. iod. solution, and yet this same patient was very quickly cured, and I had observed an almost typical course after the treatment, I permitted small quantities of air to flow into the udder now and then. Massage. An aloe powder of which most was lost, because the cow could not swallow; clysters, etc.

After the infusion the cow soon became warmer and livelier and the improvement progressed regularly so that in 4 hours the cow assumed a normal position in lying. On the same day, 10 hours after the infusion, the cow stood up, but gave only ¾ pounds (⅜ kg.) milk.

On the following day the cow had diarrhœa and marked iodine catarrh, on which account the appetite was very poor. Temperature 38° C. Iodine catarrh and diarrhœa disappeared in the course of five days, and the appetite returned,

On	September	26,	the	cow	gave	1.1	liters	of	milk.
"	"	27,	"	"	"	1.1	"	"	"
"	"	28,	"	"	"	4.0	"	"	"
"	"	29,	"	"	"	4.0	"	"	"
"	"	30,	"	"	"	8.5	"	"	"

and later day by day the milk increased to its normal quantity.

No. 13. October 8, 1896. Small, red cow aged 6 years, in apparently good condition. Had calved 14 days prior to outbreak of disease; the after-birth was not expelled until 3 days after birth, on which account from that time she had exhibited a badly colored discharge from the genitals. The udder was œdematously swollen, for which reason the cow had been milked four times daily. The last of the œdema had only disappeared the day prior to the attack. The cow had not yielded much milk during the first period after calving, not far from 5 or 6 liters daily, but had increased before the outbreak to 15 liters. The first signs of disease seen were in the evening when the cow gave less milk and staggered somewhat. In the course of the night the disease had increased much in intensity, at 3 o'clock the cow could not stand up and had become somewhat restless. I examined the patient at 8 o'clock the next morning, 12 hours after the outbreak of the disease, the cow lay listless, the head to the side, or lying straight out on the ground, at times she struck about with her head and moaned piteously. The horns, ears, the internal surfaces of the lips were cold, the tongue paralyzed. Temperature 36° C. The rumen was highly tympanitic on account of the accumulation of gases; the fæces in rectum were dry and covered with crusts, but not firm nor abundant. The bladder was distended, the os uteri almost closed, only one finger could be passed in. Treatment; 10 grammes of pot. iod. were dissolved in 1 liter of water and introduced into the udder alternating along with an abundant interrupted flow of air. Massage; an aloe powder. After the infusion the cow immediately became quiet and lay constantly with her head bent to her side; after a duration of half an hour she showed herself to be somewhat conscious of her surroundings, moved the ears, in order to drive

the flies away, reacted very quickly upon touching the eyelashes. The tongue showed active movements when touched by the fingers. After a duration of three quarters of an hour, yet before clysters were used, the temperature had increased to 36.7° C. Four to five hours subsequent to the infusion the horns and ears had become gradually warmer and the cow had now and then brought her head into the normal position; but still moaned occasionally. After a duration of five hours she lay constantly in normal position and moaned no more; after eight hours she stood up and did not stagger. She was then milked, but only gave ¼ liter of milk; later the milk yield was as follows:

October	9.	3.5 liters.
"	10.	6.7 "
"	11.	8.2 "
"	12.	9 2 "
"	13.	10.0 "
"	14.	10.7 "
"	15.	10.6 "

No. 15. October 13, 1896. Small, finely built red cow, aged 8 years, moderately fat, typical milk cow. Was milked twice before calving and had given at each time ½ pound of bloody colostrum. After calving she was milked every 4 hours and gave each time about 1 kg. (2 lbs.) of milk without the admixture of blood. She had calved about 18 hours when the disease was discovered; this was, however, so far developed that the cow could no longer stand; the attack appeared to be very sudden.

Examined 4 hours after the discovery of the disease the cow lay completely paralyzed and comatose, the head resting against the manger. The mouth stood open and respiration was essentially oral, now and then it was accompanied by a hoarse moan. The tongue hung flabby from one corner of the mouth, the eyes were dim and the cornea could be touched with the fingers without producing any reaction. Horns and ears were cold, but the muzzle was quite warm. Temperature 37.8 C. A few very firm, crustlike fæces were accumulated in the rectum. The bladder was full. The os uteri was not closed; the entire hand could be introduced into it. The udder was large and distended; it had already become of extraordinary size before calving.

Treatment. Infusion of 10 grammes of potassium iodide in 1 liter water, interspersed with abundant injections of air; massage.

About one-half hour later the temperature had sunk to 37.5° C., nevertheless the cow now reacted to touching of the cornea, and also moved the eyelids now and then without being stimulated by being touched; the tongue was held normally in the mouth and moved feebly when sharply pressed by the fingers. I attempted to administer an aloe powder but most of it was wasted. Besides the cow received clysters, etc.

After the infusion the cow had rested quietly, mostly with the head in the flank, the respiration had become normal and the muzzle warm. But after about 14 hours the cow gave a few groans and was dead. I had no opportunity for an autopsy.

With the exception of the somewhat vivifying action immediately after injection there had been no evident results from the treatment. Either the toxin

could continue to form in parts of the udder, into which the infusion had not been forced, or had brought about some other action. As the cow was small and medium fat, it is possible that the dose of potassium iodide was too great, It is also possible that through the breaking down of the salt a specific paralyzing alkaline action upon the heart was generated, so that this effect had its beginning just at the point when the toxins had reached their maximum. If this is the case, then potassium iodide in large doses can, in patients having a special predisposition to cardio-paralytic potassium action (in fatty heart), become a two-edged sword when used in milk fever. According to Binz* the iodine salts give off free iodine when it comes in contact with protoplasm, carbonic acid and water. That such a breaking up also occurs in the body, is highly probable, and that this takes place more rapidly and in a higher degree after an infusion into the udder, if the infused iodine salt is accompanied by the introduction of atmospheric air. It is therefore impossible to determine whether the air acts directly upon the products of the broken down gland cells in the alveoli, or whether it works indirectly by the bringing about of a more rapid breaking down of the iodine salt. In the latter case, a stronger iodine action is obtained with the flow of air upon the detached decomposed gland cells, at the same time, however, a greater paralytic power upon the heart. As I did not dare abandon the introduction of air, I concluded to try, on the next patient, iodine-iodide of potassium solution in order to lessen the dose of potassium iodide and the effects of the potassium and yet secure a more intense action of iodine.

No. 16. October 17, 1896. Medium sized red cow in good milking condition, a very good milk cow, 7 years old, calved about 60 hours before the outbreak of the disease, had given quite a good quantity of milk and stood readily; yet the appetite had been somewhat less than natural and to-day she could scarcely stand up. Upon my arrival, 3 hours after the advent of the paralytic symptoms, the afterbirth had not yet been expelled. The cow was recumbent, with the neck bent in the form of the letter S, but she was not very unconscious. Horns and ears were warm and the tongue not paralyzed. The cow attempted several times to get up but could not. The udder was not tense. The fæces in the posterior part of the rectum had dried up to small hard, dry, crust covered pellets, while further forward in the rectum they were of a gruel like consistence. The os uteri was quite open, and the uterus almost not contracted at all. The placenta was attached to only a few maternal cotyledons and was very easily detached. There was a chocolate colored, stinking accumulation in the uterus but the cow had had no pains. Temperature 39.7° C.

Infusion of an iodo-iodide of potassium solution (1 gramme iodine, 5 grammes potassium iodide, 3 grammes water) mixed with one liter of boiled water. Of atmospheric air there was introduced only the small column already in the infusion tube at the beginning of the operation. Massage, etc. No irrigation of the uterus was attempted.

After the treatment the cow kept quiet and lay in a natural attitude. After 3 hours she drank some water and ate some turnips. After 9 hours there was

* Frohner's Arzneimittellehre 1890, S. 262.

a nasal discharge of a clear stringy secretion and some saliva dribbled from the mouth. In 19 hours the cow was up, without having been observed in the act, and she was found standing without signs of paralysis, some distance from where she had been lying in the stall. She was then milked and gave 5 pounds (2½ kg.) milk, which had the appearance and consistence of ordinary colostrum. The urine was brownish. The cow showed no special appetite (iodism) but drank freely. The appetite returned slowly however as the iodism disappeared.

On October 18 she gave 6 liters of milk.
" " 19 " 8 " "
" " 20 " 10 " "

The owner informed me later that after a duration of 6 days she gave a very large amount of milk, and that after the removal of the afterbirth she had shown no discharge throughout.

No. 18. Oct. 25, 1896. Medium sized white cow, very well nourished, 7 years old. The udder had become very much enlarged before birth, yet there was but little œdematous swelling confined to a small area, behind one of the glands. Immediately after calving the cow had given 9 liters milk, and at the next milking also a goodly amount, both times mixed with blood. The first symptoms of disease showed themselves first, 18 hours after calving, as: diminished appetite, decreased milk flow and a somewhat uncertain posture on the legs. But as it was evening and the owner did not recognize the affection, he left the cow to herself until the next morning. Then she could no longer get up and was very distressed.

Treatment was first undertaken about 14 hours after the advent of the paralysis. The cow was very severely attacked, lay with her head to the side, and was wholly unconscious to external impressions. Her look was blank, no reaction to touching the eyes. If the head was partly raised and then let loose, it fell to the ground like a lifeless body. The entire superfices of the body, especially the horns, ears and limbs, as well as the inner sides of the lips, were very cold. The tongue, though warm, was badly paralyzed, the temperature showed 35.5° C., the respirations apparently quiet, 22 per minute, pulse and heart-beat almost indistinguishable, 52 per minute. The mouth of the womb was not quite closed; one could insert two fingers into it. The bladder was filled; in the rectum there was found a handful of small, very hard fæces; the udder was very large and quite tense, but not œdematous, in the udder there was found only about ¼ kg. of milk mixed with blood, although 14 hours had passed since the cow had been milked. There was injected iodine-iodide of potassium solution, 1 gramme iodine, 5 grammes potassium iodide, 30 grammes water, in one liter of water; at short intervals there was allowed to enter also a small stream of air. Massage. An aloe powder with digitalis was given, of which, however, a part was lost.

After the course of one-half hour the cow began to show active signs of life, moved the mouth and ears, winked the eyes and held the head forwards, though with an S-form bent neck. The temperature registered 36.1° C., and rose, in course of 1¼ hours after the infusion, to 36.6° C. Later the cow had lain quietly for several hours, the head alternately stretched out

forwards and bent to the side and had gradually assumed a livelier aspect. After a course of 6 hours she was standing up, remained standing nearly an hour and ate some carrots. Later she got up several times. After 10 hours she was milked and gave 1 lb. of apparently normal milk.

About 18 hours after the beginning of the treatment she began to tremble at intervals, and I examined her on this account again a few hours later. Before my arrival she had become somewhat restless, was very short of breath, stood up while I examined her, but staggered here and there and fell in a very unfavorable position. Symptoms of pneumonia could not be detected. Tem perature 39.0° C. Pulse quite strong, 96 per minute. Cardiac impulse strong.

The bladder was full, the urine dark brown. Fæces normal. No discharge from nose or mouth, but a somewhat snoring sound accompanying breathing. The udder had collapsed and was quite flabby. Being milked, she gave ¼ lb. milk, which was colored like normal colostrum, but in two teats were found caseous clots

The milk fever had indeed ceased about 6 hours after the beginning of treatment, but a relapse had occurred. The etiological moment had again begun to work.

From a fear of poisoning I did not venture to use iodine or iodo-potassium iodide solution, and therefore made a trial of an injection of lysol solution, 15 grammes in 1 liter boiled water, along with introduction of air. Massage. Internally the cow, which could now swallow quite well, received a digitalis powder.

She lay quietly for a short time afterwards with her head in her flank. The respirations gradually became almost normal. After the course of half an hour she lay mostly with the head in the natural position, and after three-quarters of an hour, she got up and stood apparently steady again on her limbs. Five hours later she was quite lively, ate some hay, could easily get up and lie down, but arched her back somewhat.

Temperature 38.3°C. pulse 88, fairly strong. The heart beat of normal strength, the respiration moderately quiet. Some flow of saliva from the mouth. The udder was flabby, but the secretion from all four teats watery, similar to lysol solution. *The lysol solution had had the same favorable effect* as the iodine combination, which checked the course of the disease, but an unfavorable effect upon the milk secretion. But from this experience one can see, that it is also a local action in the udder, through which the disease can be controlled. For even if one could think, that the iodine mixture could most likely have so rapid and specific a general action after its absorption into the blood, this could not be the case with a small dose of lysol.

After the lysol treatment the cow drank now and then some water, ate hay and was free from any evidence of paralysis, until about 24 hours later, when she again had a relapse and fell in an uncomfortable position. I was called again and found her lying in a natural position, but very listless, the horns and ears were cold, the temperature indicated 38°C., pulse and heart beat almost imperceptible, 80 per minute, respirations 20 per minute, no discharge from nose or mouth, fæces normal, but in the posterior part of the rectum adherent

to the mucuous membrane through desiccated crusts. The cow paid no heed to either commands or blows, when it was attempted to get her up. The udder secretion of the two teats had again become more milk-like, yet containing occasional large lumps of casein, while that of the other two teats although the color of milk, was somewhat more watery.

Infusion of 5 grammes of potassium iodide in one liter of water. Massage. A digitalis powder.

Ten hours after the infusion the cow got up again, stood steadily upon her limbs, remained standing three-quarters of an hour, then lay down quite naturally, and got up several times, and exhibited some desire for food and water.

On the next day, the 28th, she again had a relapse with paralytic symptoms, but they were not so marked as the previous time. She could not get up, however. Two liters of a 0.5 per cent. salt solution was injected into the udder, primarily as a substitute for an intravenous injection for the purpose of stimulating the heart action, and next to induce a mild local effect in the udder; a digitalis powder. In the course of a few hours the temperature increased from 38.3°C. to 39.0°C., the cow became somewhat livelier and again showed some appetite. She also stood up again, but had become somewhat weak.

During one of the periods when the cow showed no paralytic symptoms and stood, the owner had received a good offer for her for slaughter, and as I was compelled to be absent for a few days and consequently had not the opportunity to complete the treatment, the cow was slaughtered about 24 hours after the last infusion, as the feebleness continued.

This persistent weakness could very readily be the result of the repeated attacks; it is also possible, however, that it was in part due to the development of the first stages of pneumonia.

No. 19 received an infusion of 10 grammes sodium iodide. She was slaughtered 5½ hours after the infusion.

No. 44. October 15, 1897. Medium sized, red, 9-year-old, rather fat, excellent milk cow. Calved yesterday at 7.30 A. M. and to-day at 3 P. M. showed marked staggering. I attended her at 8 P. M. The cow tried several times to get up, but could not lift the body from the ground. She lay with her head alternately stretched out forwards on the ground or bent to the side, was now and then somewhat restless and moaned greatly. She had a listless appearance and the tongue was somewhat paralyzed. The horns and ears were moderately cold. Temperature 38.2° C. Pulse and heart-beat imperceptible. In the rectum there was an accumulation of crust like fæces. The os uteri was almost closed. The disease was evidently progressing rapidly.

Ten grammes of potassium, in 1 liter of water were used, with introduction of air, and 5 grammes of the sodio-salicylate of caffein were injected. No laxative powders. Clysters.

The cow then lay comparatively quiet, mostly with the head in the flank, until 12.30 A. M. At 1 A. M. she got up after having laid in a natural posture for some time, staggered to and fro and soon fell down again. About 2 A. M. she again stood up, was then free from paralytic symptoms, and remained stand-

ing for about two and a half hours. She had defecated several times and the appetite soon returned. She gave:

On August	16,	4.5	liters	of milk
"	17,	8.2	"	" "
"	18,	12.	"	" "
"	19,	13.5	"	" "

The infusion of an iodine salt in the udder, especially when accompanied with the introduction of atmospheric air, gives the promise of a quite typical result and has in a large measure brought about remarkably prompt recovery.

In most patients the comatose condition disappeared in course of 4 to 6 hours, and in the very sick cows where the temperature was subnormal, this began to rise immediately after the infusion and increased at times in the course of an hour about 1C°.

About half of the patients cured stood up and were free from paralytic symptoms after a course of 6 to 10 hours.

Thirty-six stood up in course of the first 24 hours, 6 in the second 24 hours, 2 in the third 24 hours, 1 had to be helped up after a course of 6 days on account of paralysis of the posterior limbs, and one failed to get up on account of gangrenous foreign body pneumonia (shluck pneumonie). It depends in part moreover, upon accidents, whether the convalescent stands up after the paralysis has been removed. Then it is not certain that each cow gets up as soon as she is able to do so, and the duration of the paralytic period is consequently shorter than would be recorded. In cows cured by the ordinary methods, on the contrary, the disease continues as a rule for 2 to 3 times 24 hours.*

Patients in the first stages of the disease which under ordinary treatment almost always grow worse and worse, always in an opposite degree, become constantly better and better after the infusion and in the course of a few hours are almost sound again. It is therefore of all the more importance for the course

* Friedberger und Fröhner, Lehrbuch der Speciellen Pathologie und Therapie 1889. Bd. 1, S. 442. According to H. C. Hansen, Tidsskrift f. Veter. Bd. 15, S. 286, the disease continues ordinarily 2½ times 24 hours. According to L. Andersen, Tidsskrift f. Veter. Bd. 23, S. 193, the disease continues in animals which recover, according to the data given, on an average 54 hours.

of the disease, that the patients come under treatment at the earliest possible moment after the appearance of the paralytic symptoms, best while the animal still stands.

Although results of the treatment rest until now upon the foregoing investigations, which under the conditions from economic considerations could only be pursued to a certain limit, yet 46 out of 50 affected cows or 92 per cent. have recovered. Only 2 cows died and 2 were slaughtered, while symptoms of milk fever were still present. But I do not attribute so much importance to these highly favorable results as to the typical course of the disease after the infusion, upon the unusually rapid recovery of a large portion of the very sick patients, and the sudden checking of the disease as soon as treatment is begun in mildly affected patients. True, 3 or 4 animals died, part from slaughter and part in consequence of inflammation of the lungs, which I look always upon as cases of the improper use of medicines per os. According to my experience most of these cases can be avoided, as a rule at least, if the veterinarian is called and attends early.

The iodo-potassium iodide solution seems to have had neither more favorable nor more poisonous action than the pure iodide of potash solution. On the contrary it appears according to No. 18 that the first had a somewhat irritant effect upon the udder. Sodium iodide was only used once (in No. 19); that the result was less favorable may be accidental. Of potassium iodide the dose of 7 to 10 grammes in 1 liter of water has been shown to be the best. The potassium infusion has also been used alone in some cases without other treatment of symptoms and have still had in such cases a typical course. In very sick animals a more energetic absorption of potassium iodide takes place, than in the mildly diseased, partly because the previously mentioned absorption of fluids bears a certain relation to the grade of the disease, in part also, because the milk secretion is most checked in the most serious cases, so that the infused solution does not meet with so large a milk stream from the alveoli and consequently can penetrate the same easier and more

concentrated. There is, therefore, greater danger of poisoning in patients severely ill. Doses of iodine which have been accompanied by no unfavorable complications in mild cases have produced iodism in individual cases when seriously affected. The infusion has produced a check in the milk flow but in the course of a few days it has acquired its normal volume again. The yield of milk noted in certain cases was attained on a restricted diet. The potassium iodide and air infusion has not produced in any case untoward affects upon the udder nor upon the quality of the milk. Boiled water has constantly been used for the solution. For use, the temperature had best be 40–42° C., so that after its infusion into the udder it shall still have a somewhat higher temperature than the milk in the udder. Through a relatively high temperature of the solution it loses its specific weight and can in that way be in better condition to penetrate the alveoli. If the water is boiled immediately before the patient is attended, and poured, almost boiling hot, into a bottle and this immediately wrapped in several thicknesses of paper, the solution can still be burning hot when unwrapped an hour later. The milking out before the infusion, and the hourly massage after the same must as far as possible be carried out. A small volume of air should, where possible be forced into each gland more at the beginning than at the close of the infusion.

Where the disease threatens to run a very rapid course it would perhaps be well to try to stimulate the action of the heart at once and to increase the arterial blood pressure by means of intravenous injections of physiological salt solution (0.5 or 0.6 per cent.). I have however hesitated to apply this in the usually overcrowded cow stall; a subcutaneous solution of several liters of salt solution is not practicable. For this reason, since my attention has been particularly directed to the cardiac paralysis, I have come to rely chiefly upon subcutaneous injections of camphor, coffee, and especially caffein-injections. The first agent I have used, in view of the possibility of slaughter, only upon the owner's consent. The caffein has shown in

doses of 4 to 5 grammes, a special stimulating effect upon the heart's action.

I am consequently disposed to prefer this to the other remedies. If no great danger of death is impending the cardiac power can probably be roused by abundant rectal injections of salt solution. As remarked before, in milk fever absorption of fluids takes place with great rapidity, at least in the most posterior parts of the rectum. But internally one can use laxative medicines and cardiac stimulants in the form of drenches only in those cases where the power of deglutition remains. From the standpoint of prophylaxis, the secretion of milk dare not be forced, except for pressing reasons, by milking before calving or by absolutely clean milking after calving during the first two or three days.

It is also highly probable that a dose of potassium iodide, given shortly before or immediately after birth, through its action upon the products of tissue change in the udder and its power of lessening the milk secretion, can act as a preventive. On the other hand the infusion of potassa iodide solution in the udder, as a preventive, must be regarded as too delicate, since this should as a rule be administered by a veterinarian only.

Through the foregoing studies and the experiments based thereon I hope to have lifted the veil which shrouded the heretofore enigmatical cause of milk fever; I hope further to have pointed out the source of the cause, as well as to have devised a specific, practical method of handling.

It would be highly desirable if by further experimentation there could be found a more neutral acting, best of all a medicine having a more stimulating effect upon the organism, especially upon the heart's action, with the same antitoxic powers as potassium iodide, a remedy, which the udder could, at the same time, bear equally well. If, for example, the effect of the suprarenal capsules (oposuprarenalinum) offered by Merck,* which it is claimed antitoxically increases the cardiac power as well as increasing the blood pressure by contracting the ar-

* Jahresbericht 189. (The preparation was not yet in commerce on May 22, 1897.)

teries, or some other remedy, should constantly be sought which acting on a similar line and comparatively neutral, which by infusion into the udder acts more directly upon milk fever.

I therefore regard the study from the standpoint of treatment of the disease as by no means completed, but very much hope that it can be improved. I not merely expect, but hope, that very much must be changed in, and very much added to, these, my theoretical studies, especially from the physiological and chemical sides; for our knowledge in relation to the breaking down of tissues and body fluids, and especially the products of tissue change occurring in certain organs under ordinary conditions and the import of these, to the entire organism is, unfortunately, as yet very imperfect. I hope, therefore, that this work of mine can serve as a preliminary basis for further research, which, besides chemical observations, must at the same time rest upon physiological and chemical foundations.

When I presented a report at a meeting of veterinarians in Copenhagen in the autumn of 1897, upon the cause and treatment of parturient paresis, instructor C. O. Jensen proposed a collection of the data upon the results of the potassium iodide treatment. He also announced his willingness to undertake the work.

In the January number of the *Maanedsskrift for Dryläger* there is presented a summary of the data thus obtained. Reports from 65 veterinarians are included. The report comprises in all 412 cases of calf fever, which were treated with potassium solution infusions in the udder, including therein the 50 cases already mentioned by me. Besides 5 patients were treated with subcutaneous injections of iodine. Of these five cases three ended fatally. Of the 412 cases about 90 per cent. recovered from the calf fever, while later 3.88 per cent. of these died or were destroyed on account of inhalation pneumonia and metritis. Regarding the course, details accompany the reports of 288 patients. Of these 249 got up in the first 24 hours after the beginning of the treatment, and, indeed, 27 after 1–6 hours, 135 after 6–12, 52 in 12–18, 35 after 18–24, 18 after 24–36, 11 after

I think I will try this. I cure about 90% & I can't do much more.

36–48, and ten cases for the first after 48 hours. The dose of potassium varied from 5–10 grammes. Often there were given without injury, 20–24 grammes in the course of one day, and to one animal there were given 20 grammes at one time. The infusion of potassium iodide is constantly followed by a checking of the milk secretion, but this has become normal again in the course of a few days, only in two cows has it remained lessened for a longer period.

Monatshefte für Praktische Thierheilkunde, Bd. IX., S. 241.

A NEW TREATMENT OF PARTURIENT PARESIS OF COWS.

By Prof. Olof Schwarzkopf, Flushing, N. Y.

A Paper read before the New York State Veterinary Medical Society, September 14–15, 1898, with a Postscript written for the American Veterinary Review.

Of the diseases of domestic animals incidental to seasons none is of a more serious nature and more disappointing to the veterinarian with rural practice than the so-called milk fever of cows. Every year this disease makes its appearance at the calving season and continues more or less unabated during the hot summer months. From the grave character of the disease, from the fact that it befalls only valuable, well-bred and well-fed cows, from the conflicting theories of the pathology of the disease and the utter absence of accurate and controllable therapeutics, it remains a disease dreaded by all veterinarians whose lot it is to deal with it in practice.

The theories on the pathology of milk fever, historic and present, are interesting not only in themselves but specially so as illustrating the periodic changes in medical ideas. They can, however, only briefly be referred to, as the object of this paper is to be concise and practically instructive. The oldest pathological theory which may have a claim to be scientific is that of Bentele dating back to the early years of this century. He and his followers considered the disease a lacteal metastasis, and in old veterinary books we read of milky contents in the kidneys, of milky urine, of lactiform substances found in the

lungs, etc. This theory has been forgotten by the present generation of veterinarians, but if signs are true it may be revived in a modified form. Besides the later theories of English writers which are known to you, there is that of Harms, of Hanover, who explained it as a result of suction of air into the blood vessels during parturition, followed by cerebral anæmia and paresis. This hypothesis was born at a time when fatal results were obtained by the absorption of air during operations in the early days of modern surgery, and it was apparently substantiated by the presence of air globules in cerebral vessels, a condition which later researches have shown to be the result of post-mortem blood decomposition. Then, there is the theory of Frank, of Munich, who considered the disease a result of the sudden and grave circulatory changes as produced by the abrupt loss of a large area of blood circulation in the uterus, forcing large quantities of blood into new channels, especially the brain, thus producing cerebral congestion, followed by encephalic œdema and anæmia. This complex theory, based on an intimate anatomical study of fœtal and uterinal circulation, withstood the scientific criticism of years and was until recently accepted all over the Continent of Europe. But of late it has been more or less superseded by the more modern theory of Schmidt-Muhlheim, who advanced the theory that the disease was due to auto-intoxication by certain cadaveric alkaloids similar to the sausage-poison. He argued that these poisons develop within the uterus by the decomposition of the lochia, favored by the rapid occlusion of the neck of the uterus as observed in milk fever. He based his theory on the result of the researches in experimental poisonings of Hoppe-Seiler, who discovered that a number of alkaloids, especially ptomatropine, ptomacurarine, and mytilotoxine, produce a paralysis of certain muscular groups, such as the pharynx, eye, etc., and in severe cases end in a paresis of the striated muscular fibres of the extremities and the unstriated fibres of the intestine and blood-vessels. No one can deny that these symptoms have a striking resemblance to those so commonly exhibited by milk fever. This brief review of the

principal theories shows that they have ever been influenced by the predominant thoughts and discoveries in pathology, and they demonstrate the intense desire of our professional predecessors to unravel the mysteries of the nature of this disease.

If we turn to the therapy of milk fever it is impossible to enumerate all the drugs that have been applied and found wanting. They number by the hundred; they range from the most crude and empirical applications of large quantities of drugs to the delicate use of the new biological products, and they all have been found worthless or of doubtful value. True, there are practitioners who believe they have found a "sure cure," but sooner or later they will find, as we all have found, that at one time we may be quite lucky with a certain kind of treatment while the second or third time we are decidedly unlucky. It is as Prof. Viborg once said: "Manchmal hilft alles, Manchmal hilft nichts" (Some time anything helps, some time nothing helps). I may summarize these points by saying that the medicinal treatment of this disease demonstrates most truthfully to the unbiased observer that it is not the drugs that act upon the diseased body, but that it is the living organism that reacts upon the drugs as long as it is capable of response. If from one cause or another the life of the animal is stunned, the so-called physiological action of drugs is left to be an empty phrase.

Nevertheless, there are certain methods of external and internal application which if employed at the proper time and with proper precautions tend to assist the struggling organism to overcome its morbid condition. They should never be dispensed with whatever our future treatment may be. The first indication to follow is to put the animal in a comfortable position on a copious and clean bedding, which is not always an easy matter. Then we must attend to the abnormal external temperature of the body by the use of external stimulants, assisted by friction with brushes and by covering the body in woolen blankets. Following this the udder should be thoroughly milked out, while we empty the rectum by manual extraction of the fæces, injecting immediately afterwards a pint of a mix-

ture of glycerine and water of equal parts, which rarely fails to assist in periodic evacuation of ingesta. Quite often I have emptied the bladder with apparent relief.

But when we now attempt a treatment of the alarming symptoms of distress so commonly exhibited by the animal, the deep mental depression, the paralysis of the muscles and the complete cessation of peristaltic movement, we fail. As the pharynx is early paralyzed, deglutition is difficult, if not impossible, and excludes the application of medicines per os. Thus we must rely upon hypodermic medication. To counteract the nervous depression veratrine, caffeine, strychnine, spirits of camphor, etc., have been recommended. I have applied them all and found that veratrine is the only agent to which the organism regularly responds by a profuse perspiration, but from which no lasting benefit is visible. To stimulate the peristaltic movements eserine has given me many prompt results, but in severe cases it is absolutely inefficient. Of the more modern methods of treatment the venous infusion of the normal salt solution has given me promising results.

Out of three cases so treated two recovered. The solution undoubtedly produces a general reviving effect, easily perceptible. But a relapse may follow, which leaves the animal in a worse condition, and repeated infusions of such large quantities into the jugular vein of cows so diseased are impractical because the muscles of the bent neck, if straightened, contract spasmodically, preventing the operation. Besides, the cow-stable cannot readily be fitted into a laboratory and the preparation of the solution and the process of infusion require a cleanliness and an assistance that cannot be had in such surroundings. To overcome these difficulties I have tried the hypodermic injection of the artificial serum of Cheron, which was recommended as a substitute for the normal salt-solution as being of more precise action and applicable in smaller quantities. Of two cases so treated one came to rapid recovery, the other ended in death, which appeared to be hastened by the injections.

This was my experience with the treatment of the disease

when I read last winter a short notice in the *Berliner Thierärztliche Wochenschrift* announcing the discovery of a new treatment of milk fever by veterinarian Schmidt, Kolding. According to him the cause of the disease must be located in the udder, which, by the suddenly increased lactation after birth, loosens great masses of old glandular cells (colostrum) in a sort of cleaning process. These undergo a decomposition and form toxins which are absorbed into the blood circulation, resulting in auto-intoxication. He, therefore, directed this therapy against the udder and particularly against an abnormally high milk secretion, both qualitative and quantitative. It being known that iodide of potassium has the effect of decreasing the milk secretion, he experimented with a solution of this drug by infusing it directly into the milk-glands. Out of fifty cases so treated forty-six recovered.

Schmidt's treatment is in detail as follows: After attention to the first symptomatic treatment the udder is milked out, thoroughly cleansed with soap and water and the udder and teats disinfected with a lysol solution. Iodide of potassium, 7–10 grammes, are then dissolved in one litre of freshly boiled water, the solution filtered and cooled to 40° and slowly infused into the four teats in equal parts. The infusion is accompanied by massage of the udder. The apparatus for infusion consists of a glass funnel, a rubber tube of 1½ meter of length and a milking tube. He recommends 5 grammes of caffein with 10 grammes of distilled water subcutaneously if the pulse is weak, and if deglutition is not impaired an aloe powder is given per os.

This treatment is certainly a wide departure from our customary methods. It is interesting because it is new, simple and direct, and if the hypothesis of the cause of the disease is correct it must be scientific. I confess that I was sceptical at first, but was resolved to try and criticise afterwards. Thus I can report the following cases:

Case I (*Failure*).—On May 23, 5 P. M., I received a hurry-call to come to a cow near Whitestone which was bloated. When I arrived I found the animal, a Jersey, lying in a pas-

ture, the head bent to the left side. She was in great distress, groaning heavily, grinding the teeth and was in tympanitic condition. From a hurried verbal examination of the owner, which brought out the fact that the animal had calved two days previously, I informed him that the cow had milk fever in a severe form and that the prognosis was unfavorable. I resolved to try Schmidt's treatment, and after giving directions for first treatment, drove to the nearest drug store to procure iodide of potassium and a new syringe, as I had not yet acquired an apparatus for infusion. When I returned I found the cow in worse condition, but proceeded to prepare the iodide solution in a nearby kitchen. I found the injection into the teats a tedious process, although I had no difficulty in inserting the syringe, but it had become dark and I had to proceed by the light of a lantern. When I had finished and given a hypodermic injection of eserine, I watched the animal for two hours, but could see no effect of the treatment. When I called early next morning I was informed that the cow had died at 4 A. M. I opened the udder and found that the solution had been entirely absorbed and that no inflammation had resulted from the manipulations.

Case II (*Recovery*).—On June 2, 10 A. M., I was called to College Point to a cow reported apparently suffering with milk fever. I found the cow, a Jersey, in a pasture, unable to rise and trying to keep the head straight, which would occasionally fall to the left side with a jerk. The case presented a light form of the disease, but I made the prognosis doubtful. I was prepared for Schmidt's treatment, made the solution in a restaurant and infused it through the apparatus, which worked like a charm. I applied hypodermic injection of 5 grammes of caffein, and, noticing that the animal was bellowing for her calf, which had been removed by the owner, I had it returned and bedded next to her, which quieted her greatly. At 7 o'clock at night I received a telephone message that the cow was up but very weak. I called the next morning and found her still weak and swaying from one side to another when moved. I applied

a stimulating drink and left. On the third morning the message said the cow was still weak but otherwise all right.

Case III (*Recovery*).—On July 6, early in the morning, I received a call to go to Douglaston to a cow that had calved and was sick. I found the animal, a fine Jersey, in a box-stall with all the symptoms of a severe form of milk fever. I informed the owner of the unfavorable prognosis and then applied Schmidt's treatment at 9 A. M., injecting 10 grammes of the iodide solution. Being requested to call again, I arrived there at 5 P. M. and found the cow little if anything changed, but not worse. I resolved to give a second injection of the iodide solution, reduced to 5 grammes which was easily done. I called again the next morning and found the cow still lying, but head erect and trying eagerly to consume a bran-mash. Third morning the cow was reported up and apparently well.

Case IV (*Recovery.*)—On July 14, 4 P. M., I was passing through Whitestone when I was halted and requested to attend to a sick cow. I found same in pasture suffering from a light attack of milk fever. After applying first treatment I went home to get my infusion apparatus and one hour later I was applying Schmidt's treatment. I called the next morning and found the cow still lying, but being coaxed with her calf she got up with assistance. The milk secretion was rather scanty.

In conclusion, I wish to say that, favorable as these results appear to be, I have learned to be cautious, and I shall warn you against too much enthusiasm. True, I have never had three cases in succession that recovered as well as those above cited, but we all have seen good recoveries before. One point I want to make standing out clearly, namely, that Schmidt's treatment requires a painstaking thoroughness and cleanliness, and that the manipulations of infusion are a delicate process that should not be performed by crude hands. If you will observe these points scrupulously and skillfully then the treatment will be a pleasure to yourselves and give great satisfaction to the intelligent class of your clients. I hope you will report

your good results and not pass in silence over your failures, for it is rather by such that we learn than by continuous success.

POSTSCRIPT.

Since reporting the above joint cases I have to add another application of Schmidt's treatment :—

Case V (*Recovery followed by Mastitis*).—On October 5, early in the morning, I was called to a cow at Bayside that had calved three days previously and had shown first symptoms of disease the night before I received the message. I found the cow, a fine Jersey, in a box stall in a lying position. She was utterly unattentive and at times would groan. The head was still held in a straight position, but the neck showed a peculiar stiffness. The owner, a farmer, had already made the diagnosis of milk fever and gave up the cow as lost, reiterating that her mother also had died of milk fever. I did not have the infusion apparatus with me, but attended to her comfort by providing her with copious bedding, removing a large quantity of dry fæces from her rectum and applying a clyster of glycerine and water. As I was out of caffein I gave a hypodermic injection of eserine, and then drove to my office, which is about two miles distant. Returning in the afternoon, at 2 o'clock, I found the cow worse and applied quickly the infusion of iodide of potassium—about 18 to 20 hours after first symptoms of disease. I gave also a second injection of eserine, as the peristalsis was totally suppressed, warned against any other treatment and left, fearing that the infusion had been applied too late. When I called the next morning I found the cow standing in her stall, somewhat emaciated but otherwise none the worse for her illness. The udder appeared normal, but milk secretion was scanty.

On October 9, four days after the infusion of the medicine, I was called to the same cow and found her suffering from a left-sided mastitis. The owner naturally brought this complication in direct connection with the infusion. But inasmuch as the cow had apparently recovered from milk fever, but had been confined during five days in a warm box-stall and then turned

out into a yard wet by rain and exposed to a rough wind, in order to clean the stable, I feel safe in concluding that the mastitis had been caused by taking cold after recovery. Besides, this is a common cause of mastitis, so frequently met with in dairy stables.

Yet this case gives a warning, and I can only repeat my advice to observe the strictest carefulness and cleanliness. Anticipating just such an occurrence I had added to my outfit for Schmidt's treatment a white oil-cloth on which I place the udder for disinfection after I have thoroughly washed it with soap and water. For disinfecting the udder, and especially the teats and the infusion apparatus, I use creolin, which may be considered as efficient as the lysol recommended by Schmidt. Finally, I wish to mention that I have improved the apparatus for infusion by inserting at the lower end of the rubber-tube the glass-tube of a straight eye-dropper instead of the recommended milking tube. By this means it can be observed when the column of fluid has been fully expended into the teats, which must be guessed at by using a milking tube.

For the present I shall abstain from a critical consideration of the value of this new treatment of milk fever. It has been said, and it is very true, that this method of treatment is empirical, as we do not know the exact cause and nature of the disease. But if the rapidly increasing number of favorable recoveries are impassionately weighed, it looks as if Schmidt's theories cannot be far from being correct, and that after all we have been enriched by a new method of treatment which, by further improvement, is likely to lead to a successful therapeutic of milk fever. O. S.

VETERINARIANS OF CHICAGO have an excellent chance to study pathological anatomy and histology under the direction of Prof. Klebs and his very able assistant, Prof. Ziet. Only eight B. A. I. veterinarians avail themselves of the opportunity. The hours of attendance are from eight until eleven Tuesday and Friday evenings.

[WRITTEN SPECIALLY FOR THE AMERICAN VETERINARY REVIEW.]

THE TREATMENT OF THE U. S. ARMY HORSE IN THE LATE WAR.

BY PROF. OLOF SCHWARZKOPF, V. M., FLUSHING, NEW YORK.

No doubt the people of the United States may well rejoice at the brilliant victories achieved by the army and navy, and should be proud of the magnificent results obtained, which deserve everlasting gratitude towards the leaders and bearers of our arms. But the time has now arrived to calmly study the causes of the deficiencies with which our military organization and administration has been charged. Many of these charges will be found to be groundless, because suffering and death are inherent to the exigencies of war. But other charges have a true foundation, and can be readily explained by the unpreparedness of the United States for a foreign war, and especially so by an antiquated system of military organization.

There can be no objection to such investigations by either the War Department or the heads of army departments, if they are undertaken in a just and unbiased spirit, and by those who are in a position to judge as experts in special military branches. In fact, such investigations should be welcomed, because it is only in this way that suggestions for improvement can be formulated and a repetition of avoidable mistakes be averted.

The treatment of the United States soldier in the late war has already come in for a more than just share of criticism by philanthropic men and women all over the country, and the grievances of the "boys in blue" are being looked into by a board of honored and experienced warriors. But no voice has as yet been raised against the silent sufferings of the other animate beings that help to constitute an army in the field, and on whose work so much depends in war. It appears from reports of trustworthy correspondents, and from the writer's own observations, that within a few short months thousands of horses and mules have been unserviceably crippled or killed in camp or during transportation, from needless exposure, neglect of care

and from diseases, for no other reason than an utter absence of expert care and authority. Surely, horses in the field, when tied to picket-lines or confined in corrals, can no more be cared for as in the garrison stable as can the soldier in the tent enjoy the comforts of home life. But the ignorance and carelessness in handling animals during transportation has been so apparent; the negligence as to first principles of feeding and caring at camp so gross; the sanitary supervision so ridiculously rudimentary, and the medical treatment of wounds and diseases so crude and cruel, that one wonders whether all this could happen in a civilized army without more than a passing comment by those in authority who in civil life had seen these matters attended to on a rational basis. All this has happened, too, while the vast majority of these public animals were simply retained in camps, and it is not difficult to foretell what would have been the result of this lack of expert supervision if these many thousands of horses and mules would have been hurled into the open battle-fields on foreign soil.

There has been no attempt by the officers in charge of the camps to explain this state of affairs any further than to lay it at the door of the Quartermaster-General. But this gentleman may have been too busy during the war to have noticed these complaints against him, so we will reiterate a few authentic reports for his information:

N. Y. *Sun*, Aug. 16, 1898, page 4.—*With the Expedition to Porto Rico.* This expedition left Tampa on July 23. It consisted of Light Batteries C and M., Seventh Artillery, Troop B, of Second Cavalry, a pack-train of 600 mules, ambulances, etc., all under command of Brigadier-General Schwan, U. S. Volunteers. It is no purpose of this letter to criticise, but certain defects should be mentioned and attention called to them in order that they may be avoided in futnre. So far as the transportation of men is concerned, since they can move about the ship, little need be said. But when it comes to the dumb brutes, enough cannot be said or written. The horses of Light Battery C were placed between decks and just above the hold of the transport *D. H. Miller*, and it was absolutely pitiable to witness their sufferings. Even the passages on either side of the boiler-room were fitted up with stalls in which the animals, crowded like sardines, have actually sweated away their lives during the past seven days. There can be no economy in such proceeding. The Society for the Prevention of Cruelty to Animals should certainly have an agent or two at every port from which trans-

ports may sail in the future. The Quartermaster Department is naturally desirous of sending forward as many animals as possible, but when treated in this manner they will be utterly useless, even if they finally arrive alive at their destination. What is needed is the employment of men experienced in these matters. The quartermaster is too busy, even if perfectly capable, to attend to such details.

Sun, Aug. 16. * * * The ignorance displayed in the shipment of horses and mules needs severe criticism. The first horses shipped at Tampa were absolutely lowered into the hold like wooden boxes, and before a dozen of them had been thus accommodated nine of them were dead, and had to be lifted out again. * * *

N. Y. Herald, Aug. 20, 1898. The death rate among the cavalry horses at Tampa and Fernandina is extremely high in most of the regiments. Many of the horses, from lack of rations, swallowed quantities of sand in grazing in this arid country and died from that. Almost all were more or less blistered on the back by the intense heat, and these blisters often formed sores which finally rendered the horse useless. Many died of heat-prostration and disease, but nobody seems to know what this disease really is; some say it is epizootic, others pronounce it glanders. The Tenth Cavalry suffered smaller loss than any other regiment mainly because they had a veterinarian who insisted on the best of care of them. The result was that the regiment has come out with as sturdy looking a lot of horses as one would wish to see.

Dr. J. P. Turner. in a report to the thirty-fifth annual meeting of the American Veterinary Association, writes as follows: Sept. 2, 1898: When one contemplates four million dollars being spent for war-horses and mules without any proper veterinary supervision, one wonders at the recklessness of such mismanagement. A glance at the thousands of horses and mules in the great corrals at Tampa, Fla., would show any honest man that something is wrong in the present system. During the month of May from five to ten thousand animals were in this corral and *not one veterinarian* to treat them, and dozens were dying every day. Later on, one of the old non-graduate army veterinarians, a man past sixty years of age, was sent to this corral to save him from the climate of Cuba, when the invasion was ordered. He was without authority, assistants, hospital or medicines, so his value to the corral can be imagined.

Dr. G. E. Griffin, Fifth U. S. Cavalry, reports in the AMERICAN VETERINARY REVIEW, November, 1898, that the government-teamsters at Tampa, watered the mules in pools formed by rain in the depressions of the palmetto swamps which were charged with decaying organic matter. The object of the teamsters was no other than to save themselves from walking to the designated water-trough at a distance. The veterinarian had no authority to prohibit this proceeding. The result was that in a few days the wagon-master reported several cases of "cracked heels," but on examination it was found that water leeches had penetrated the skin near the hoof and had produced foot-rot. Thirty-two mules of one wagon train became so afflicted, five among them died from sloughing of the hoof, others had to be shot to end their suffering and several were left behind uncured when the command left.

The N. Y. Mail and Express, October 11, 1898, reports that the Quartermaster Department purchased "in haste" 17,149 cavalry and

artillery horses and 21,090 draught-mules. These 38,239 public animals were designated to different camps. The writer has seen several thousand of these animals at the camps, on Long Island, and in his opinion a great majority of the horses at least were unfit for military service in war and a number of them were noticed to be unsound at first glance. The slip-shod manner in which these horses must have been purchased was demonstrated at the auction sale of the horses of the Rough Riders held at Fiss, Doerr & Carroll, New York It had been announced that these horses were carefully selected by government-inspectors and they drew a big crowd of purchasers. But when great numbers of undersized, unshapely formed horses were produced who showed plainly the broncho type or the lowest kind of trotting formation, the astonishment and disgust of the crowd knew no bounds and many hard jokes were cracked at the expense of the government. It was stated that the purchasing agents of the Quartermaster Department had paid $65 a head for these horses, yet without ever having been to war and being in fairly good condition they could not sell for more than $8 to $15. One tiny little horse only was bought in for $85 for mere curiosity's sake, by a riding school amid plenty of cheering, because he was the only animal that had been at the Santiago battle and had a bullet hole in one ear to prove it.

The above concise reports contain enough evidence to show that the purchase of public animals for war purposes, the mode of transporting them to their destination, and the methods of their sanitary supervision at camp have been inefficient and fundamentally wrong. The Quartermaster Department, to whose sphere of work and direction these matters belong, has thus shown itself incapable to cope with them intelligently in the emergency arising out of the war, and—it was never prepared to fully do so in peace. Whenever and wherever special knowledge and training have been required, the army and navy have been alert and prompt to secure the services of men so educated. This is simply the common result of modern civilization. But the Quartermaster Department has not been progressive enough to learn that the intelligent execution and administration of veterinary matters calls for expert knowledge and skill of a higher order, and that such accomplishments can only be possessed by properly educated graduates of veterinary medicine. Instead of accepting the opportunities for the institution of an efficient veterinary service in the United States army, so frequently offered by the Military Committee of Congress, the Quartermaster-General has persistently refused such offer, and has frittered

away his time in useless endeavors to create amateur veterinarians from the ranks of the assistant-quartermasters, cavalry and infantry officers, chaplains,* farriers and civilian-agents, which experiment must inevitably result in failure, and which has actually produced conditions as cited above.

The writer feels that the time has passed to argue the questions whether an organized veterinary service would materially improve the condition and activity of an army in the field, and whether it would bring about a saving of needless expenditures. This has been demonstrated long ago by those European armies which have maintained such corps for the last fifty years or more. The only points open to discussion are these: First, what kind of a veterinary organization are we to adopt, and second, how are we to institute this new organization into the existing army service?

We must naturally look for a model for such organization to the foremost armies of Europe. Not that we should adopt such in its entirety, for foreign armies have their peculiar features that are objectionable to ours. But we must find a basis on which to build our future organization, letting it work out its own forms and merits according to the spirit and the needs of this army. From this point of view the British army veterinary organization commends itself as the most natural and practical to build from. It consists of a corps of commissioned officers, whose personnel is selected from the graduates of the English veterinary schools. It is in charge of a principal veterinary surgeon with the rank of colonel, and the personnel consists of staff veterinary surgeons with the rank of lieutenant-colonel and major who are attached to the army corps; of veterinary surgeons ranking as captains, most of whom are detailed as instructors to various training schools; of assistant veterinary surgeons who are attached to the regiments of cavalry, artillery, and to the battalions of transportation, and of farrier-majors, farrier-

* A chaplain at a post in the Northwest, situated on an Indian Reservation, has been for some time detailed to inspect (?) cattle supplied to Indians for consumption, although at the same post is stationed a veterinary surgeon.

sergeants and shoeing-smiths, who compose the non-commissioned personnel of the corps and who serve with the troops and batteries. The Department has its own administration, it renders reports and returns, controls its medical stores, purchases and condemns horses, inspects forage and cattle and meat for army consumption, and superintends the military shoeing-school at Aldershot.

In the field the "regulations for the organization of the line of communication," issued in army circulars of June 15, 1887, the veterinary officers are stationed as follows: The principal veterinary surgeon attached to Headquarters, one staff veterinary surgeon attached to each army corps, one staff veterinary surgeon attached to the Inspector-General of the line of communication. At the advance depot and veterinary hospital, calculated for 500 horses, the personnel consists of: One veterinary surgeon in charge; 3 assistant veterinary surgeons; 1 farrier-major; 8 farrier-sergeants; 8 shoeing-smiths.

It seems superfluous to comment on the character of such an organization or the work that must come from it. To those who have never heard of an army veterinary corps, or who have never seen the results of intelligent veterinary service, it may look appalling, and to those who have reason to fear it, it may be a shock. Yet it is the natural outgrowth of actual experience gathered in many wars, especially in the colonies, and as the English war authorities are noted for their good common sense and practical accomplishments, they must have found it a paying investment or they would not have kept it and improved it from time to time as they have done.

The Italian army veterinary corps is similarly constituted, and its officers are commissioned, ranking from colonel to lieutenant. In the French army the veterinary officers are also commissioned, the principal veterinary surgeon ranking as lieutenant-colonel. In the German and Austrian army the veterinary surgeons are not technically officers, but as non-combatants they rank as "higher military officials," equivalent to the officials of the Judge-Advocate's Department, Paymasters

Department, Subsistence Department, etc. They wear uniforms similar to those of the line officers, and their pay and allowances correspond to the grades of majors, captains and lieutenants of the mounted service. In both armies a colonel of cavalry is the Inspector-General of the military veterinary service. The instructive divisions of these army departments are especially commendable to other armies as they furnish instructors of military veterinary science to the officers attending the cavalry, artillery and riding-schools, to the advanced military cadets, to the Subsistence Department for the inspection of meats, and to the many excellent schools for army-shoeing smiths.

Suggestions for the Establishment of a Veterinary Department of the U. S. Army.—Considering that the above sketched army veterinary organizations are intended as working units for much larger standing armies, we must necessarily reduce our own future veterinary department to a size and standing commensurate with the extent of the United States army. It matters little whether the present ten regiments of cavalry are retained or extended to twelve, but it is hoped that the three regiments of field artillery may be established as recommended by the Army Reorganization Bill, and it is further hoped that the thousands of detached horses and mules of the Quartermasters Department may be formed into companies or battalions of transportation. As far as the numbers of public animals and their professional supervision are concerned we must note here the astonishing fact that in 1890, *the British War Department controlled 13,600 public animals and had an established veterinary corps of 200 veterinary officers, whereas the United States army at the same time controlled about 15,000 public animals and employed fourteen civilian veterinarians.*

We cannot touch here upon the reasons for this wide divergence, but from it alone it appears hopeless to suggest the establishment of a complete veterinary corps in the United States army. Thus we must commence at a modest scale and yet try to make this service effective. This can be accomplished, the writer believes, by establishing a corps of 40 veterinary officers

provided they are properly graded in rank and can command and instruct the farriers and shoeing-smiths of the troops and batteries. Figuring their subordinate personnel as approximately consisting of 400 farriers and smiths, the personnel of the veterinary department would come up to about 450 officers and men.

The administration and direction of such a force, with its hospitals and stores of supplies, etc., should certainly be under the guidance of an officer ranking as major. It has been suggested by some higher army officers, who are interested in this scheme, that the major commanding this corps should be selected at the start, from the cavalry regiments or the Quartermaster's Department, and that his office be attached to the Quartermaster General's and he be made a chief of bureau. The writer thinks it rather odd that a professional veterinary corps should be directed by a professional soldier; but inasmuch as the duties of this officer would be purely administrative, and in order to smooth things over for a start of such a bureau or division, he is inclined to yield to the wishes of those who are favorably impressed by such bureau but who retain a certain amount of excusable distrust. But there should be no yielding on the point that to the professional veterinary officers the way of promotion should be conceded, and that they should be allowed the professional direction and advice of their own superior officers. Only in this way an efficient force could be maintained. It would be illusory to give to a limited number of veterinarians the rank of mere second lieutenant, as recommended by a bill before Congress for several years. Little good, if any, could come from such a measure, as it is easy to foretell that it would entail no end of conflict of authority and responsibility under the existing organization of the army. Thus constituted the Veterinary Department would consist of:

One major, in charge (Officer of cavalry or of the Quartermaster's Departmnt.)
Five captains, mounted:
One attached to the Bureau at Washington.

One detailed as instructor at the cavalry and artillery school at Leavenworth.
One detailed as instructor at West Point.
One in charge of a shoeing-school to be established.
One in charge of a remount-depot to be established.

In case of war these five veterinary captains should be attached to the staff of the army corps.

12 first lieutenants, mounted, detailed as veterinary surgeons to the regiments of cavalry.

20 second lieutenants, mounted, detailed as assistant veterinary surgeons to the regiments of cavalry and artillery, and at such army-posts where larger numbers of animals of the Quartermaster's Department are stationed.

200 farriers, ranking as sergeants, and attached to troops, batteries, etc.

200 shoeing-smiths, ranking as sergeants or corporals.

The duties of this department would be, in outline, as follows: The medical and surgical treatment of sick and injured public animals, their sanitary supervision in quarters or field, the purchasing, storing and distributing of medicines, instruments and appliances, the purchasing and condemning of horses and mules, the inspection of cattle and meat for army consumption, and the instruction of mounted officers, of advanced cadets, and of farriers and shoeing-smiths.

The drafting of a bill, embodying the above sketched scope of work, and the rank, pay and tenure of office of these officers should properly be executed by the War Department.

The establishment of such a veterinary department in the United States army depends upon Congress. If to this body of enlightened men the disgraceful condition of the present veterinary service is explained, they will surely remedy it. They should know that at present there is no veterinary organization whatever in our army; that the War Department considers the 14 army veterinarians as civilian employés as regards their privileges, but that many minor military authorities regard them as soldiers as regards their duties; that they are appointed by the Secretary of War, but that they can be discharged at the pleasure of their regimental commander; that their pay is only $100 and $75 per month; that they have to borrow medicines and instruments from the local quartermaster, while the troop commander and his farrier can squander them; that their status in many other respects is utterly confused and without a precedent in the history of military organizations. These Senators and Representatives will then understand that the services of veterinarians, so hampered in their position, must be very limited, and they can

be told that—*de facto*—they are far below the par of ordinary application of knowledge and skill. They will understand that such equivocal position can only draw and retain few qualified men, and that there are at present unqualified men in active service for whom Congress should find an honorable outlet by pensioning them, commensurate with the long and faithful services rendered to the army and the country. And it should be explained to the members of Congress that modern veterinary education is fully equivalent to that of military education, and that the State of New York, for instance, exacts by law a higher standard of preliminary education for veterinary colleges than is demanded at the U. S. Military Academy located within her borders; so that the personnel of an intelligent and efficient veterinary corps, as suggested above, could be easily secured if inducements are afforded to men of experience and standing in the veterinary profession to enter the military service.

So far the knowledge of these disgraceful affairs in the army service has been confined to the War Department and to the veterinary profession of the country. But if they should become public, the people of the United States would rise in a storm of righteous indignation. They have loudly demonstrated that they want a clean, intelligent and humane treatment of their soldiers, and if they knew they would just as loudly condemn any inhumane and incapable treatment of the horse; for the human love of the horse is natural and is the endowment of a kind Creator, who has deeply stored it in the breast of man.

HIPPOPHAGY.—In Paris, during the year 1897, 22,029 solipeds were killed for consumption and sold at the numerous horse meat markets. These included 21,667 horses, 310 donkeys, 52 mules. At the slaughter house the meat seized by the inspectors represented in weight 204,209 kilogrammes and was comdemned from animals found to be suffering with glanders, hydrohæmia or other affections.

[WRITTEN SPECIALLY FOR THE AMERICAN VETERINARY REVIEW.]

INTRATRACHEAL MEDICATION IN THE TREATMENT OF PURPURA HAEMORRHAGICA.

BY GEORGE J. GOUBEAUD, D. V. S., BROOKLYN, N. Y.

The writer, in bringing this subject before the readers of the REVIEW, does not do so with any idea of claiming originality in the line of treatment for purpura hæmorrhagica, but with the sole object of advocating a form of treatment the results of which appear to be almost marvelous. He has seen cases which appeared almost hopeless at the beginning of the treatment, and in less than one month's time the animals were able to perform the labors which were imposed upon them. One case in particular appeared to be *in extremis*, and in twenty-nine days he was discharged cured, and from that time to this he has been hauling an express wagon, and has had no recurrence of the disease. Under the old method of treating these cases I must confess that I had poor success. From the time of my graduation up to the time of beginning this form of treatment for cases of purpura hæmorrhagica, I treated ten cases suffering from this disease. Six of these cases I would classify as bad. All of them died. Four recovered. The four that recovered were mild cases, and at no time during treatment did any of them present any symptoms of an alarming nature. Those of the four cases recovered in periods varying from six to nine weeks. The fourth case I treated for four days, when the owner decided to do nothing for him, thinking him not worth the expense which would be incurred in treating him. He turned the animal out to get along as best he could. He received absolutely no treatment after the owner practically abandoned him, but recovered in ten weeks. The agents I employed were turpentine, ergot, digitalis, iron, nux vomica, potassium chlorate, potassium nitrate, potassium iodide, hot fomentations, scarifications, etc. Under the new system I have treated seven cases, six of which were positively cases of purpura hæmorrhagica. One case was doubtful. I should have employed the

expectant form of treatment in the last or doubtful case were not the animal a valuable one, and, fearing that by the time I would have been enabled to make a positive diagnosis the inroads made by the disease would be so severe that the animal would be beyond all human aid and succumb. His symptoms and condition I will describe later on. In describing the treatment and the results, the writer does not attempt to enter into the pathology of the disease, nor into the physiological and therapeutical actions and effects of the agents used. He simply presents the cases and the clinical results of the agents employed as they appeared to him, as clearly and as concisely as possible. Four of these cases had the poorest of hygienic surroundings; four had some previous disease; one had a recurrence of the œdema, but to no alarming degree. Five cases are living; one I lost track of; he was sold to a dealer; one dropped dead four months after he was discharged; I heard of the fact too late to determine the cause of death; his carcass had already been carted to the offal dock and disposed of.

The treatment consists of intratracheal injections of iodine crystals and iodide of potassium and one-half ounce of distilled water, sufficient to dissolve the two chemical compounds. The proportions are:

℞ Iodine cryst., grs. x.
Kalii iodi, ʒij.
Aquæ dist., ℥ ss.

M. et fiat injectio. Sig. One dose for intratracheal use.

I inject this quantity morning and night for three days. Then once a day, gradually decreasing amount of dose till œdema subsides and the petechial spots in the nostrils disappear, the continued use depending upon the severity of the attack and the condition the individual presents to the veterinarian. I also employ strychnine to be given by the mouth in the form of solution, such as

℞ Strychniæ sulph., grs. ij.
Aquæ dist., ℥ ij.

M. Sig. ʒ ij on tongue every three or four hours.

The frequency of the dose depends on the condition of the ani-

mal, such as debility, exhaustion, prostration, anorexia, etc. If the strychnine be boiled in water, after which there be added a small amount of alcohol, there need be no fear of a precipitate forming or a deterioration in strength.

A few remarks concerning the mode of administration of the agents employed will be of value to those intending to employ this form of treatment: If the rules be carried out no fear need be entertained as far as bad results are concerned. They will lessen anxiety, time and trouble, and perhaps embarrassment. I use a four-drachm hypodermic syringe or one sufficient to hold one dose of the solution, and employ a large and strong hypodermic needle. It is very essential to have a strong needle. If a small and frail needle be used we will have the unpleasant task of hunting for half of a hypodermic needle in the muscular and tracheal structures. Physiologists tell us that deglutition is impossible unless there is something in the isthmus of the fauces to swallow in order that the act may be begun and completed. The substance entering the isthmus of the fauces stimulates all those normal and physiological contractions. Without that substance entering the isthmus of the fauces the act cannot and will not take place. Personal experimentation will prove this. We can make attempts at swallowing two or three times. Further than this we cannot cause the muscles of deglutition to contract. I do not think they ever gave intratracheal injections of the previously mentioned solution through a small needle. If they did I think they would have had an hour's work dissecting out half of a hypodermic needle. Contractions do occur. I have seen the sterno-hyoideus muscle thrown into a violent spasmodic contraction, which lasted for over a minute. My hypodermic needle, the strongest which I could procure, was bent almost in half during this act. Elevate the head to about one-half of the arm's length and insert the needle in about the centre of the cervical portion of the trachea. At this point the skin and trachea lie one over the other with a small expanse of the sterno-hyoideus muscle between. Feel for the space between the intratracheal rings. Slowly force the

needle through the skin and through the space between the rings for about one inch. Should the first attempt be unsuccessful, do not attempt to force the needle through tracheal cartilage. Raise or lower the point of the needle, use slight pressure, when suddenly the needle will enter the trachea. Now, *very slowly* empty the contents of the syringe into the trachea. While emptying the syringe the animal will continue the attempt to swallow. If it make rapid attempts at swallowing you will know that the fluid is entering the lungs too rapidly. Coughing and sneezing will result and the fluid will be thrown up into the mouth and nose. It is advisable while giving the injection to have the animal chew some hay. It attracts its attention and lessens the tendency to cough. The head should continue to be elevated for about five minutes. On account of the corrosive action of iodine, the syringe and needle should be immediately washed after use. The following is the report of the cases as they progressed, with the history of each case:

Case No. I.—Bay gelding, eight years old, in poor condition, weight 1200 pounds; had recently recovered from an attack of pneumonia; used in an express wagon. Sanitary conditions bad. The animal appeared to be sick for about a week previously; legs œdematous; no appetite; sero-mucous discharge from both nostrils, tinged with blood. The animal was unable to perform the labors which were imposed upon him. A veterinarian was called, who pronounced it a case of glanders. I saw the patient on the seventh day after the owner first noticed that his horse was sick. When first seen it presented all the typical and characteristic symptoms of purpura hæmorrhagica. I might also add that he presented a pitiable sight, being unable to move; legs swollen to such a degree that the skin cracked, through which oozed a bloody serum. The sternum and abdomen were extremely œdematous, as was also the left side of the cheek and nose. He was breathing through the right nostril. Prostration extreme; temperature 105°; pulse 90, weak and small; respiration 30, short and quick. From the

nostrils there issued drop by drop a sero-sanguineous fluid and occasionally a small amount of dark-colored mucus. Mucous membrane on both sides of the nasal septum was covered by a conglomerate mass of petechial spots from which there appeared to ooze a sero-sanguineous fluid. Mucous membrane very dark colored. The drinking water was taken from a well fifteen feet from the manure pit and outhouse. Diagnosis: purpura hæmorrhagica; prognosis bad, and I so advised the owner.

Previous to seeing this case I had read in the REVIEW an account of the iodine treatment and its success, so I therefore determined to give it a trial, which I did, with the happiest results.

First day.—At 5 o'clock in the evening I gave the first injection, to be followed by one-fourth of a grain of strychnine hypodermically.

Second day.—General condition the same; at 9 A. M., temperature 104°, pulse 80, respiration 30. 6 P. M., temperature 104⅗°, pulse 90, respiration 28. Gave injection morning and night; ordered strychnine, ¼ gr., every three hours, to be given by the mouth. No change in the animal.

Third day.—7 A. M., temperature 103°, pulse 70, respiration 30. Respirations deeper and longer, pulse strong and regular, slight decrease in size of swellings; urinating every two hours, quantity large and dark colored; œdema on the side of the cheek and nose has disappeared. Ate about two quarts of oats. Gave injection 7 P. M. Condition about the same as morning. Gave injection 10 A. M.

Fourth day.—A perceptible decrease in size of all the swellings; temperature 101°, pulse 60, respiration 24. Appetite improved; pulse strong and regular; general condition and appearance much better; petechial spots disappearing; cough is present, accompanied by a muco-purulent discharge, dark colored; distinct mucous râles over region of trachea and larger bronchi. Injections night and morning still continued.

Fifth day.—9 A. M., œdema has almost entirely disappeared; temperature 104°, respiration 50, pulse 90, weak and irregular;

mucous membrane of rectum protruding through the anus, œdematous and congested-looking. Animal appears distressed; colicy symptoms; ordered enemas of hot water and turpentine every fifteen minutes. Gave injections of iodine and strychnine. At 1 P. M. was notified animal had colic. Found him straining violently; he could neither urinate nor defecate; gave rectal injection of hot water and turpentine every five minutes; hypodermic injection of morphia sulph., 1 gr.; intratracheal injection of iodine solution. 9 P. M., animal greatly improved; temperature 101°, pulse 60, respiration 20. Defecation and urination normal; right front leg very œdematous and also left external lumbar region. Gave intratracheal injection of iodine solution.

Sixth day.—Temperature 100°, pulse 60, respiration 24. General appearance better, no visible œdema except at the ankles; body covered with a rash; hair falling out in small patches; nasal discharge still present; eating three quarts of oats at each meal. Ordered milk to drink in place of water; gave injection of iodine solution. Did not return at night.

Seventh day.—General appearance same as yesterday; well-developed rash on the body. Gave one-half injection; strychnine still continued.

Eighth day.—Temperature 100°, pulse 52, strong and regular; respiration 21. Appears bright, is able to move without fear of falling. Gave half injection of iodine solution.

Ninth day.—General appearance normal, slight cough, accompanied by discharge, which is dark colored. Temperature, respiration and pulse normal. No injection; continued strychnine till fifteenth day, then stopped all medication and on the 28th day he was put to work. His recovery was rapid; he gained in flesh and strength surprisingly, and at the end of two months after being taken sick his spirits and ambition came back, and to-day he is a larger and a better horse than he was previous to developing the attack. This was a bad case.

Case No. II.—Black gelding, six years old, weight 1000 pounds, used as a coupé horse; hygienic surroundings bad. Two weeks previous had suffered from a bad attack of influenza.

All symptoms of purpura hæmorrhagica well developed; temperature 102°, respiration 20, long and deep; pulse 80, weak and irregular. Gave injection morning and night; strychnine by mouth every four hours.

Second day.—General condition about same as previous day; slight cough, followed by muco-purulent discharge of dark color; mucous râles over trachea and larger bronchi. Gave injection. At 7 P. M. only change seemed to be in appearance of œdema, which was more extensive; both hind legs met; unable to move.

Third day.—General appearance better; œdema decreased in size; urinating about every two hours, quantity large and dark colored; pulse 70, strong and regular; temperature 104°, respiration 36. A drizzly rain fell all day. Evening, about same as morning; refused to eat. Gave injection.

Fourth day.—Temperature 101°, pulse 66, strong and full; respiration 30, full and deep; severe cough; appetite better. Gave injection. Evening, about same as morning. Gave half injection.

Fifth day.—General appearance much better; temperature 102°, pulse 60, strong, full and regular; respiration 30, strong and deep; cough, followed by discharge, which is dark colored. Gave half injection.

Sixth day.—General appearance greatly improved; œdema of abdomen, sternum and extremities decreased to one-half size; other symptoms same as previous day. Gave one-half injection.

Seventh day.—General appearance much better; no œdema of abdomen; limbs have almost returned to their normal size; temperature 100°, respiration 20, pulse 52; appetite normal; hair beginning to fall out; a rash covers the body; urinating frequently. Gave half injection; continued strychnine.

Eighth day.—General condition same as yesterday; no visible œdema; petechial spots still present on nasal septum; I should judge about 25 on each side. The spaces between the spots appeared to possess a healthy color; on fourteenth day had all disappeared. Gave half injection.

Ninth day.—General appearance and condition was such that I discontinued injections, but gave strychnine every four hours till sixteenth day, when all medication was stopped.

On twenty-second day he was put to work and has been well ever since. This case I would consider a mild one.

Case No. III.—Brown mare, aged, used in heavy truck. Owner stated that she had suffered from a bad attack of colic two weeks previous, followed by a bad attack of diarrhœa, which lasted five days, during which she ate absolutely nothing. On twelfth day after she had colic, owner found lip swollen. On thirteenth day, abdomen œdematous. On fourteenth day, owner found her suffering from severe attack of epistaxis. The animal when seen presented the appearance and symptoms of a well-developed case of purpura. At no time did she present any symptom of an alarming nature, aside from the sudden appearance of œdema, which was as severe as on second day of my beginning treatment. It occurred on tenth day, two days after I had discontinued injections. They were resumed for four days and then discontinued. From the eighth to tenth day it had rained continuously. Strychnine was continued till sixteenth day, after which no medication was given. On the twenty-sixth day she was put to work. The owner informs me that she has increased in weight and has also become very lazy. The hygienic surroundings were about as bad as could be. This case was a mild one.

First day.—Animal presented appearances of mild case of purpura hæmorrhagica; all symptoms well developed; temperature 103°, respiration 18, pulse 80, weak and irregular, missing from two to four beats per minute. Gave injection night and morning; strychnine by mouth, ¼ gr. every four hours.

Second day.—Condition about same as previous day; temperature 100°, respiration 18, pulse 80 and irregular; slight cough, accompanied by muco-purulent discharge, dark colored; mucous râles over trachea; no appetite. The cough discharge and râles remained for about three weeks, after which they disappeared.

Third day.—Animal slightly improved, appears much better and livelier; œdema about one-half size; eating three quarts of oats at each meal. Gave injection morning and night.

Fourth day.—About same as previous day; no perceptible change. Gave injection in morning.

Fifth day.—Animal making good recovery; no œdema; petechial spots disappearing; in fact, had almost disappeared on eighth day and reappeared on tenth day, disappearing entirely on eighteenth day. Gave injection.

Sixth day.—Same as preceding day. Gave one-half injection.

Seventh, eighth and ninth days.—Animal making good recovery, convalescing quickly; able to leave stall; walks with staggering gait. No injection.

Tenth day.—Œdema has reappeared to about same size as at beginning of treatment; petechial spots reappeared; no appetite; temperature 104°, respiration 30, pulse 60. It had rained almost continuously for two days and is still raining. It may be well to state here that during treatment whenever the weather was disagreeable the condition of the patient almost invariably became aggravated. Gave full injection morning and night.

Eleventh day.—Temperature 100°, pulse 52, respiration 18; œdema one-half size. Weather clear. Gave one-half injection. His condition gradually became better every day. Injections were discontinued on fourteenth day; strychnine discontinued on eighteenth day; œdema disappeared entirely on sixteenth day. Discharged cured on twenty-second day, and on twenty-sixth day was put to work.

Case No. IV.—Gray gelding, used in coal cart, 12 years old, weight 1100 lbs.; had no previous disease; poor sanitary surroundings; an abundance of bad usage, poor feed and poor care. He had œdematous limbs for four days previous to my seeing him; a mucous discharge from both nostrils, tinged with blood; owner thought he had glanders. The owner thinking that he was not worth the expense which would be incurred in treatment, wished to have him destroyed. I prevailed upon

him to allow me to treat him, to which he reluctantly consented. Three weeks after I discharged him. He was sold to a dealer. I then lost track of him. This was an extreme case and I am positive that had I treated him under the old system which I usually employed he would have succumbed. He received no medication other than that which I gave myself, for the groom was too busy emptying the contents of what was at one time a respectable-looking pitcher. The animal's temperature varied from 103 to 106° for six days; ate and drank very little; prostration extreme; confined in a foul-smelling stall, surrounded by dirt and filth; in short surrounded by every agent conducive to disease. This animal presented an extreme case; I have never seen one as bad. He received in conjunction with iodine intratracheally, strychnine hypodermically. Both injections were given twice a day for twelve days. His recovery was slow, his general condition on some days good, on other days bad, until the ninth day, when he began to improve slowly, until the day he was sold, which was on the 27th day, after which I lost track of him, I could not induce the dealer to tell me what he had done with him. This was the only case I treated in which the œdema continued to shift after the iodine injections were employed. On account of the shifting character of the œdema I was tempted more than once to perform tracheotomy as a precaution, fearing laryngeal involvment.

Case No. V.—Bay mare, seven years old, used in butcher's wagon. Had had influenza one month previous to development of attack of purpura hæmorrhagica. Appetite good; in fair condition. This case was the most interesting one I ever saw on account of the peculiarity of the œdema and its shifting character. The œdema practically ceased to change its location after treatment was begun. When first seen she was stiff and refused to walk. When compelled to walk the front feet would barely leave the ground and at every step she emitted a grunt. A very slight œdema on the lower half of sternum; very hard, did not pit on pressure except at the edges; temperature $100\frac{2}{5}°$, pulse 60, respiration 14. Suspected deep abscess;

ordered hot fomentations and a dose of physic. Tumor gradually increased in size till fifth day; was very large, pitted on pressure, quite soft and fluctuating; temperature 104°, pulse 60; was able to walk with comparative ease, no grunting. The tumor was lanced in several places; no pus escaped, but serum escaped continuously.

On the sixth day tumor had disappeared almost entirely. Owner stated that it had all run out. Could walk and trot without difficulty; all functions of body apparently normal. Did not see animal again for three days. Owner called me to see the animal because of a very severe œdema over left eye; he thought she had been stalled. Upon examination found a severe œdema over left orbital region, well defined, about size of a child's head; hard, painful and immovable; eyelids everted, mucous membrane dark red and œdematous. The skin over the orbital process was denuded of hair and over this spot serum flowed freely. On account of the severity of the œdema I was unable to examine the eye itself; ordered hot fomentations. On the next day the œdema had disappeared to about one-half its original size, so I was enabled to examine the eye itself. The sclerotic coat was a perfect chocolate color. This color reappeared after the disease had been well developed; it lasted for about twenty-four hours and then disappeared. Not having seen nor heard of this peculiarity before, I did not suspect the real cause. I did not see the animal again for three days; owner informed me that she had again become stalled and injured her left hind hip. The muscles of the gluteal region were hard, painful and very sensitive; animal was quite stiff and walked to one side. I suspected that a rheumatic affection was the cause of this condition. Next day swelling had shifted to lumbar region; temperature, pulse and respiration slightly above normal; appetite normal; ate four quarts of oats at a meal. Next day, or fourteenth day after she was first seen, her body was covered with a number of small tumors, varying in size from that of a hickory nut to an average sized peach; they seemed to be imbedded in the muscular structures—hard, painful and immovable. There were none on

the legs, armpits or thighs; no enlargement of the sub-maxillary glands; mucous membrane of nasal septum, dark and leaden color; temperature 102°, respiration 16, pulse 60. Treatment, expectant. As sedative to owner gave analine, grs. xx; aquæ, ℥ij. Two drachms every three hours.

Fifteenth day.—Medication very powerful, all tumors having disappeared, but they seemed to coalesce and form one large one, occupying the occipital and the superior cervical regions. The shifting character of the tumors continued for four days. The temperature varied from 99° to 103°, pulse at times as high as 80°. At no time did I detect petechial spots in nostrils or was there any discharge, for I suspected something far more serious than rheumatism. I examined the nostrils and Schneiderian mucous membrane thoroughly every day. On the twenty-first day after I had first seen the animal, the true character of the disease was detected. Both patellar regions became involved; the œdema terminated abruptly in the upper third of the tibia; both knees œdematous. I now suspected purpura hæmorrhagica and on next day all the symptoms of the disease were well developed. Active treatment was begun on the twenty-third day. The orbital region became involved again, but disappeared on the twenty-fourth, and did not appear again.

Active treatment was employed for twelve days and at the end of nineteen days after active treatment was begun she was discharged as cured. She gradually recovered strength and spirits, so that she was enabled to leave her stall and roam through the fields in search of clover, of which she was very fond. On the second week after she was discharged, the owner informed me that he would put her to work. She was sufficiently able to lie down and roll over several times in rapid succession; was gaining flesh rapidly, eating everything that was offered to her. The owner thought that her condition was such that light work would be beneficial. She did not lie down in the stall since she was first taken sick. She was found lying on Saturday morning; the owner left orders that she be not

disturbed. He left on a business trip, and did not return till the following Monday; she was still down, and totally unable to rise. On account of her extremely exhausted condition and her positive inability to stand, even when placed in slings, I ordered her to be destroyed. Post-mortem examination revealed an incomplete fracture of the ischio-pubic symphysis. Careful questioning failed to elicit any information as to how the accident occurred.

This case presented to me many interesting features. First, the character of the swellings previous to their being localized in the extremities—always hard, unyielding, painful on pressure, apparently deeply situated, the shifting character, which was always sudden, unaccompanied by any external manifestation from the animal. In three hours time they would disappear, to reappear in some other locality; the absence of any positive symptoms until the twenty-second day after she was first seen; the almost sudden appearance of all the typical and characteristic symptoms of the disease; the appearance of the small tumors on the body and neck, and not on the extremities; they were principally on the trunk, imbedded in the superficial layers of muscular structures; the character of the swellings after treatment was begun; their gradual disappearance. On the sixth day the œdema reappeared, and disappeared on the tenth day, after which there was no recurrence. It had rained continuously all day; temperature ran up to 106°, pulse 110, respiration 50. The discoloration of the sclerotic coat of the eye was new to me; I had not seen a case before nor since. The enlarged orbital region, with no other appreciable symptoms; the slow course which the disease took before any symptoms were detected whereby I was enabled to make a positive diagnosis; the absence of any positive symptoms until the disease had existed for more than three weeks; the slow course which the disease assumed before treatment; the rapid recovery after active treatment had begun; the abnormal amount of urine which the animal passed after active treatment was begun; its gradual decrease after treatment was discontinued; and, lastly,

careful and guarded questioning failed to explain any reasonable cause for the accident to the pelvis. This case I would class as bad.

Case No. VI.—Bay gelding, nine years old, truck horse, weight 1400 lbs.; had no previous disease. Hygienic surroundings poor; had been ailing for a week. When seen he presented the typical appearance of a well-developed case of purpura hæmorrhagica, but in a mild form. The course of the disease presented nothing interesting; recovery was rapid. The injections were discontinued on the seventh day; strychnine was discontinued on the seventeenth day, after which he received no other medication. On the twenty-third day he was put to work, at which he continued until the end of the fourth month, when, while driving along the street, he stumbled and fell dead. The swelling disappeared entirely on the eighth day. On the tenth day there were no petechial spots; his temperature never exceeded 103°, pulse always strong and never above 60, respirations always normal. This was a mild case. In fact, one of those cases which would have recovered by careful nursing, a change of surroundings, and strong nerve stimulation.

Case No. VII.—Gray gelding, five years old, weight 850 lbs., a road horse. Had an attack of catarrhal fever one month previous. This case I consider doubtful. I will describe the symptoms as they presented themselves to me: Legs swollen to almost twice their normal size. The œdema gradually decreased till the regions of the elbow and patellar articulations were reached, when it slowly decreased and lost itself in the muscular structures of the aforesaid regions; prepuce and scrotum œdematous, an extensive œdema of the abdomen; temperature 100$\frac{2}{5}$°, respirations 12, pulse 52, strong and full; Schneiderian mucous membrane dull and of a leaden color. On the inner angle of the left nostril there appeared a small dark red pimple, about the size of a pin's head, surrounded by a dark zone, which gradually shaded to the color of the mucous membrane. This spot disappeared twelve hours afterwards. On the fifth day the color of the membrane began to change,

and on the tenth day it appeared normal in color. Although well groomed, the hair of the animal was rough and dirty looking, always standing up. Urine normal in amount, but high colored. Manure soft and yellow looking, covered with shreds of mucus. Tongue coated and having an unpleasant odor. Appears bright, walks without difficulty, trots stiffly; is easily fatigued. Diagnosis, probably purpura. Treatment, a dose of physic. Third day, the physic acted very strongly; œdema about half the size; the spot in the nostril had disappeared. Fifth day, œdema still present; ordered one hour's exercise, after which the swellings had disappeared almost entirely. Sixth day, the œdema had returned to a severe degree; it was much worse than when first seen. As this animal was a very valuable one—at least, the owner thought so—and fearing that before I would be able to make a positive diagnosis of purpura, if such it were, the inroads made by the disease would be so severe that the animal would succumb, I did not employ the expectant treatment, for the reason which I have just stated. I gave the injection twice a day for four days, once a day for four days. On the eighteenth day he was discharged cured. I do not say that this was a case of purpura, I say that it was very suspicious.

To those intending to use this form of treatment, I will say that they need not have any fear of bad results, due to the fluid entering the pulmonary structures. The treatment at first thought seems to be heroic, and I have no doubt but that it is a very powerful method of giving the iodine. The foregoing observations are the result of my personal experience, as clearly and as concisely as I can put them, and should they benefit any member of the profession I will be amply repaid for the trouble which has been incurred in the writing of this article.

AT the December meeting of the Veterinary Medical Association of New York County, Dr. Goubeaud, author of the above paper, will read an important communication on a new method of employing charcoal for the relief of gastric tympany. January REVIEW will contain it.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations, he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."

BEE-STING DEATH.

By C. H. PEABODY, D. V. S., Charlton City, Mass.

On September 7th, about 2 P. M., a horse, about twelve years old, 15 hands high, weighing about 1200 pounds, in good condition, was attacked by bees and severely stung for about twenty minutes before he was gotten away from them. The horse had been at farm work every day and was to all appearances well.

At 2.25 the horse was gotten to the barn. At that time did not appear to be in much pain. The head, face, neck, lips, ears, around the eyes, over the body, inside the legs and under the abdomen were filled, as one might say, full of bee-stings. The parts were washed with strong ammonia water. The animal at this time stood quite still, but in about ten minutes he began to shake his head and his respiration began to increase. I at this time took his pulse, and they were fifty. At 2.45 the pulse was sixty, respiration thirty, and temperature 102°. The animal would stretch and urinate every three minutes, it being of a dark brown color, having a distinct odor of the poison of the bee. The breath at this time also had the peculiar odor of the poison. There was frequent evacuation of the bowels, and after a few times it became thin and watery, with severe and hard straining.

At 3 P. M. the above-described symptoms had increased in a marked degree. The pulse was 80, respirations 60, temperature 104°, with marked symptoms of delirium. He would throw himself on the bedding, then up and tug at the ropes, plunge and whinny in a loud, shrill voice. These symptoms lasted until 4.15 P. M., when they began to abate and the respiration began to be somewhat stertorous. He began to show symptoms of paralysis of the extremities.

At 6 P. M. he was unable to get up. The pulse had decreased to 60, respiration to 40, but the temperature was 105°, with stertorous breathing more marked. These conditions continued in a more marked degree until 9.30, when he died, about seven hours after he was stung.

Made an autopsy at 8 A. M., ten hours after death, and the following lesions were found:

The head, neck, body and extremities were swollen, the penis protruding and swollen to more than three times its natural size, the tongue protruding and swollen, the buccal cavity congested. In making an incision through the skin, a peculiar fœtid odor came from it. The muscular tissues were congested, the cellular tissues were inflated with a yellowish gelatinous fluid, the lungs were infiltrated and engorged with blood; the muscular tissues of the heart were soft and flabby, the cavities filled with blood clots of a dark tarry consistency, and the aorta contained the same. The mucous membrane of the trachea and air passages were congested, and in places there were petechial spots. The external appearance of the stomach and intestines was of a dark reddish color, and there was, I should judge, almost a gallon of a yellowish fluid in the abdominal cavity. The liver looked normal, but it would tear and break down very easily. The kidneys looked whitish externally, the bladder being contracted. The mucous membrane of the stomach was congested and the contents quite fluid. The intestines were congested and marked with petechial spots all through them. Pyer's patches were inflamed and thickened. The cavities of the kidneys were congested, as were the mucous membranes of the bladder and urethra.

There was a peculiar odor about the cadaver, and the post-mortem appearances reminded me of a case I had a few years ago that was poisoned by the administration of cantharides.

It is claimed by scientists that the poison of the bee is formic acid, but the symptoms in this horse were almost like one poisoned with cantharides.

Wishing to become more familiar with bee-stings, I procured an animal and a swarm of bees and let them become acquainted.

On September 12th at 2 P. M. the symptoms were about the same in about the same ratio, up to the time of the commencement of the stertorous breathing, when I began to administer the officinal solution of potassa in one-ounce doses every half hour; also hypodermically, three-grain doses of sulphate of morphine. I gave the solution of potassa in linseed gruel, one and a half pints of whiskey. The first dose was given at 5.30 P. M. At 6, no marked change, when another dose was given. At 6.30 the temperature, which had been $104\frac{3}{5}°$, came down to 104°, the pulse from 60 to 48, and the respiration from 40 to 28. At 7 P. M. she got up without assistance. The stertorous breathing had somewhat subsided at this time. Gave another dose of the mixture, also another injection of morphine. The straining

to evacuate the bowels had become less frequent, the attempts to urinate ceased, and the animal stood with head down, lips somewhat swollen, eyes closed, and tongue lolled out. Respiration, temperature and pulse same as at 6.30. At 7.30 P. M., same symptoms. Did not administer any medicine. 8 P. M., some straining. Gave more morphine and some whiskey, *no potassa.* 9 P. M., no straining, no pain, no medicine. 9.30 P. M., pulse 40, respiration 20, temperature 103$\frac{3}{5}$°—the same time that the other horse without any treatment died. The animal continued to improve. I saw her until 1 A. M., when she was placed in a box stall. I saw her again at 5.30. She stood with head down, lips swollen. At 9 A. M. the pulse was 40, respiration 20, temperature 102°. Was given mucilaginous drink, cooked oats, green grass. Did not move around much during the day. The urine was quite dark in color, did not void any fæcal matter at all; fœtor of the breath was not so well marked. At 5 P. M., she drank four quarts of water, ate a pint of oatmeal and a little grass. Left her for the night—pulse 40, respiration 18, temperature 101°. The next morning at 9.30 I saw her. Swelling had gone down about head and lips, looked bright, ate and drank fairly well; was turned out in the lot and has improved every day until now. She appears well with the exception of a few ulcers on lips and nose.

Now, the questions that arise in my mind are: "Do bee stings in large quantities act like cantharides poisoning, or does some chemical change occur that paralyzes the nerve centres after the irritating action has passed off? Did the potassa have anything to do with counter-acting the action of the poison, or did the morphine stop the nervous irritation, if such existed, or did the whiskey stimulate enough to bridge over the critical point, or was not the old worn-out horse as susceptible to the action of the poison as a strong healthy one?"

THE VETERINARIAN AND THE CAT.

By Francis Abele, V. S., Quincy, Mass.

Was asked to see a black gelded cat, 9 years old, that had bitten a man in the calf from no provocation whatever. Just previously it had bitten the man's housekeeper in the arm.

Cat was in the cellar. I marched down with a saucer of milk, to see her try to drink. She mewed, straightened her tail as if glad to see me and I proceeded past her on the cellar steps. I had just reached the cellar floor and was putting the milk down when she sprang at my calf and fastened her teeth and

claws in full length. I caught her tail and scruff of neck to remove her, but she refused to let go either hold, so I knelt down, placing my right knee on her back and strangled her with my hand. Once I drew my revolver but I dared not fire against the cement cellar floor at that angle and so close range. I saw her eyes protruding; not a gasp had passed her since I got my clutch. It seemed full five minutes before I could recognize her end. Her teeth were so firmly locked in my leg that I had to tear the flesh, in withdrawing the cat. The fang prints were ¾ inches apart; the spread of jaw was two inches, taking the bite along the axis of the leg.

Was she rabid? I don't know. The owner is quite anxious. His wounds were cauterized, so were mine. He worries about it. I don't, for outside of the savage tendency I could learn of no symptoms of rabies.

The cat had been more or less cranky for some time; when women passed her she would box at their skirts. If petted more than she wanted, would spit and scratch. In my opinion it was a development of that crankiness.

The cat was taken to Dr. Frothingham, of Harvard University, to make a cultivation from, on some rabbits. We'll know more possibly after that.

Later Developments.—Rabbits both became rabid inside two weeks. Man has gone to Pasteur Institute. Over a month has now elapsed since bite.

EXTRACTS FROM EXCHANGES.

FRENCH REVIEW.

DYSTOKIA IN A COW—CÆSARIAN OPERATION—RECOVERY [*By Mr. Derain*].—As the author says, this operation is not common in veterinary obstetrics, though a few cases are recorded in operations on some animals. His case is unusually interesting. The cow, about 14 or 15 months old, had been suffering with labor pains since morning, and when Mr. D. was called he found that the size of the animal and the presentation of the enormous fœtus, rendered impracticable all thoughts of embryotomy, and the Cæsarian operation was perhaps the only way to save the mother. The operation was performed at night by acetylene lamp light, with as much antiseptic measures as possible, the fœtus extracted alive, the uterus cleaned and the wound closed with sutures and dressing of iodoform. The

operation lasted two hours. The fœtus lived 5 days and died from pneumonia. The cow recovered.—(*Journ. of Zootech.*)

PROLAPSUS RECTI IN A COLT—ANDRE'S SUTURE—RAPID RECOVERY [*By Mr. A. Labat*].—The suture of André is simple—it makes an artificial sphincter. It is made with a needle carrying a single or double strong thread, which is introduced on the upper part of the anus, below the tail, at one centimeter from the anal opening; a suture is made, "stitch forward of stitch, all round the anus," and stopped when reaching about one centimeter from the starting point. In this way the anus is surrounded by a ligature like that of a purse; it can be closed at will, and according to indications, to permit the passage of fæces or prevent prolapsus of the rectum. This suture was applied by the author on a six-weeks old colt, which for a week had a prolapsus, which, though reduced several times, had become complete and the rectum was prolapsed in its entirety. The reduction was difficult and demanded great care. The André suture was applied, a hand being kept in the rectum during the operation, and tightened in such a way that the small finger could enter the anus. The animal strained but very little after being allowed to rise. He received laxatives for a couple of days. Four days later the suture was removed and the colt entirely recovered, being discharged four days after.—(*Rev. Veterin.*)

PROLAPSUS RECTI—GANGRENE—RECOVERY [*By Mr. A. Labat*].—A 10-year-old mule had a prolapsus of several days' standing which was irreducible. It formed a tumor made by the displaced rectum; the tumor was globular in shape, slightly contracted in its middle and measured twenty centimeters in length and in width. It was hard, painless, almost cold. Its surface covered with sanious sores, and several gangrenous patches of a very fœtid odor. After minute washing with an emulsion of crisyl, 10 per cent., and removal of some gangrenous eschars, reduction was attempted, but failed. This condition remained for three days, same cleaning, same attempts and failures to reduce, no change. On the fourth day, the aspect was somewhat modified; the raised mucous membrane presented several lumps, as big as an egg, which were formed by the rectal folds. The whole surface was again thoroughly cleaned, these projecting lumps excised with the ecraseur and the rectal tumor reduced by more than half was then easily reduced. One arm in the rectum prevented a return of the trouble, and, after straining severely for a short while, the

animal became quiet. The after treatment consisted in embrocation of boricated vaseline in the rectum. Three days after the operation the mule passed her fæces herself, and from that began to improve in condition. Her recovery was complete on the tenth day.—(*Rev. Veterin.*)

DYSTOKIA BY EXCESS OF VOLUME OF THE CALF COMPLICATED BY EMPHYSEMA OR BY CYSTS [*By H. A. Morel*].—The five observations recorded by the author are very interesting and the conclusions essential to the veterinary obstetricians. In one case it was a calf of large size, with extensive hypertrophy of the skin and of the subcutaneous cellular tissue and having cervical cysts; in another the calf was monstrous in size; in three others, besides the large development of the animal, there was general emphysema. In four of the cases the operation of embryotomy had to be performed; complete in three of them, part of the fœtus (the head) had to be left in the other. Of these four, the one in which the embryotomy was incomplete recovered, but remained very delicate; two died; one only got well. The Cæsarian operation was performed on the fifth animal, who died also. Mr. Morel says: "As soon as the diagnosis is made, advise the slaughtering of the animal rather than to attempt the extraction of the calf. Forced extraction always failed. Embryotomy is always long, painful and its success is not always certain. The only rational indication is the Cæsarian operation."—(*Rec. de Med. Vet.*)

BIBLIOGRAPHY.

PROCEEDINGS OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION, SESSION 1898. Edited by the Publication Committee, W. L. Williams, Chairman. Ithaca, N. Y.: Printed for the Association.

Promptly at the announced date, the neat volume containing the proceedings of the thirty-fifth annual meeting was delivered at the post-office for transmissal to the members, the one addressed to the Editor of the REVIEW arriving on November 1. In some respects the present edition is superior to any of its predecessors, while otherwise it is of equal merit. For the first time the entire edition is bound in cloth, as it should be, for surely it is of sufficient importance to a veterinary library to entitle it to a permanent position upon the shelf, and as a contribution to professional literature it will form a valuable reference work for many years.

While fewer pages are occupied, the text has been more care-

fully edited, and much that in former volumes was simply of local interest, has been eliminated; nothing has been lost by this pruning, but much saved in time to the reader and cost to the association.

It contains a table of contents, including the deliberations of the United States Experiment Station Veterinary Association and the Association of Veterinary Faculties of North America, list of officers and committees for 1897–8, resident State Secretaries, officers and committees for 1898–99, list of honorary and regular members; minutes of the proceedings, including the President's admirable address (published in the October REVIEW), list of new members, the important discussion upon meat inspection, and the papers presented by the various essayists, viz., "Acute Indigestion in the Horse," Roscoe R. Bell; "State Control of Hog Cholera," M. H. Reynolds; "Wild and Cattle Diseases," H. D. Fenimore; "Points of Value in a Country Practice," S. S. Whitbeck; "Army Veterinary Service," Corcoran and Treacy; "Aryteno-ideraphy," L. A. Merillat; "The Practicability of Immunizing Breeding Cattle against Texas Fever by the 'Tick Method,'" J. W. Connoway; "Our Milk Supply," Charles Ellis. Following these pages the minutes and papers presented at the Experiment Station Veterinarians' Meeting and the Faculties are given in full, making in all a very clear and intelligible *résumé* of the convention at Omaha.

CORRESPONDENCE.

PROF. LYMAN EXPLAINS THE "GLOBE" QUOTATION.

HARVARD UNIVERSITY, BOSTON, November 3, 1898.

Professor Roscoe R. Bell, Editor:

MY DEAR DOCTOR:—On page 588 of the November number of the REVIEW I see you have done me the honor to refer to a paper of mine recently read at the opening exercises of this school, in so far as a portion of it was reported in the Boston *Globe;* and that from that report you have inferred that I have stated that the American College did not at first admit students. I have never had the pleasure of seeing the report of my address which was made by the *Globe*, but I have no doubt that you have quoted it correctly; they, however, have misquoted, apparently, this portion of my address. What I did say in this connection was this:

"It was not until 1857 that our first school, the New York

College of Veterinary Surgeons, was chartered. The college was, from the first, under the management of a board of trustees, composed of medical men; and there were two veterinarians upon its teaching staff—one a graduate of Alfort, the other of the London College.

"After a time dissensions arose between the trustees and the professors, which resulted, in 1875, in the establishing by the professors of a new school in New York City, the American Veterinary College.

"For a number of years after this the doors of the New York College remained closed to students. * * * The American Veterinary College, which is the real continuation of the first effort, has, under Professor Liautard, continued the good work, and too much cannot be said in praise of the effort which, commencing amid chaos, continued its exertions, in spite of all obstacles, until it found itself the *alma mater* of the larger portion of American veterinarians."

The whole address is now in the printer's hands, and I hope before many days to have the pleasure of sending you a copy of it; I will do so at any rate as soon as it comes to hand; and when you have received it I shall be exceedingly obliged if you will not only read it, but also criticise it freely in the REVIEW, for I am sure that in this way I shall be able to correct the error which you have already pointed out in the article referred to.

Yours very truly,

CHARLES P. LYMAN.

[NOTE.—Just before going to press the little pamphlet referred to by Prof. Lyman was received, and while his quotations were accepted as being absolutely accurate, we beg to confirm them, and to say that this is but another illustration of the utter unreliability of statements upon professional topics in the secular press.—EDITOR.]

TEXAS FEVER TICKS.

PARIS, October 13, 1898.

Dr. Roscoe R. Bell, New York City:

MY DEAR DOCTOR:—I have received in answer to several applications from one of my friends in America a box containing several ticks, taken from cattle suffering from Texas fever. As I do not know who the kind sender was, you will oblige me by inserting this in your next issue, which is the only way I can thank him for the remembrance. The box and its contents arrived in perfect condition; the ticks were quite dried,

and if he can send me others, I think he had better put in the box some damp moss instead of wadding.

Yours truly,

14 Avenue de l'Opera. A. LIAUTARD.

SOCIETY MEETINGS.

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The regular monthly meeting was called to order on Wednesday, November 2, 1898, at 8.45 P. M., with the President, Dr. Robertson, in the chair. The following members responded to roll-call: Drs. Amling, Ackerman, Bell, J. S. Cattanach, J. S. Cattanach, Jr., Dickson, Ellis, Foy, Gill, Grenside, Hanson, MacKellar, O'Shea, Robertson and Ryder (15). The minutes of previous meeting were read and approved.

Report of Board of Censors.—Dr. Gill (Chairman) offered the following report: "Charges have been preferred against Dr. J. S. Lamkin, for violation of Article VII of the Code of Ethics, he having connected himself with a live stock insurance company. On motion of Dr. Bell, seconded by Dr. Cattanach, the Chairman was requested to notify Dr. Lamkin to present himself to the Board of Censors at their next monthly meeting to answer said charges. Carried. [Signed: Drs. Gill (Chairman), Bell, Cattanach, and McKellar.]" Moved and seconded that the report of Board of Censors be accepted and placed on file. Carried.

Judiciary Committee.—Dr. O'Shea (Chairman) stated that although it was a little early for legislative work, the committee had been advised that several bills at variance with our present State veterinary laws were on foot, but that the Judiciary Committee were on the alert to attack them when introduced.

Papers.—Dr. Grenside read a very practical and interesting paper entitled "The Horse's Mouth," as follows:

Under this somewhat ambiguous title I do not purpose discussing the ordinary diseases of the mouth so fully treated of in text-books, but rather wish to direct your attention to this important organ of the horse, and view it to some extent from the practical horseman's standpoint.

It may be asked, why introduce a subject that comes within the province of the practical horseman at a meeting of veterinarians? In reply I may say I think I can show that when the mouth is studied from the standpoint of an organ by which the horse is controlled and

guided, conditions arise which cause the provinces of the practical horseman and veterinarian to overlap, and it would puzzle a constitutional lawyer to strike the dividing line.

While it is not absolutely necessary for a veterinarian to be a practical horseman under all circumstances (though it always is an advantage), conditions arise referable to the mouth in which it is a great assistance in aiding one to explain faults and troubles to our clients to which driving and riding horses are subject, and to suggest means for their relief.

I think we will all agree that there is no point in connection with a horse that contributes so much to the pleasure, comfort and safety of either riding or driving him, as what might be called a responsive mouth, or one which obeys the slightest intimation promptly, from rider or driver of restraint or guidance. A good mouth is to a large extent natural to a horse, so that some horses if properly handled can have their mouths made almost perfect. Such horses as a rule must have their heads so related to one another that they can bend their heads upon their necks with ease. If horses so formed have bad mouths, it is usually the result of irrational handling, unless they happen to be unduly nervous or unintelligent animals.

Horses whose mouths are not good are very subject to soreness occasioned by injury from the bit, and the result of this soreness is manifested in a variety of ways.

In horses driven with curb bits with a stiff mouthpiece, the usual seat of injury is the tissue covering the branches of the lower jaw at the points where the bit presses, which becomes bruised and excoriated, and the bone underlying is sometimes injured, even to the extent of a piece being chipped off. It is extraordinary how common this form of injury is in the city, especially amongst dealers' horses, and is by no means uncommon in a large proportion of other horses driven with curb bits. Jointed or snaffle bits seldom injure the branches of the lower jaw, but sometimes press the cheeks against the anterior molars, and abrade the inner surface of the cheeks, especially if these molars are rough. Of the numerous ill-results of soreness and discomfort in connection with the mouth, I may mention the following faults and troubles noticeable when riding or driving, viz., crossing the jaws, keeping the mouth more or less open, lolling the tongue, slobbering, tossing the head, carrying the head to one side or the other, pulling out in double harness or crowding in, going cornerwise, side-lining, not going into the bit, carrying the head unsteadily, pulling, boring down, balking, rearing, plunging, or rushing when starting off, especially out of the stable, restlessness in standing, breaking or going unsteadily in harness when going within the horse's speed, mixing, hitching or hopping either in front or behind, interfering, and, last, but not least in importance, bridle-lameness. Certainly a number of other causes operate in producing the faults I have enumerated, but the most prolific one in the majority of instances is some discomfort in connection with the mouth.

As a rule, if these troubles are attributed to the mouth by owners or coachman, the teeth are usually assigned as the cause, when in reality a bruise of the jaw occasioned by the bit is the trouble, but the anterior molars are rasped and rerasped, still the source of irritation (the bit) is used day after day, applied to the sore and tender spots.

If one considers for a moment, one can realize the extreme sensitiveness of these sores, and the excruciating pain a horse must suffer when facing the bit in the morning, so that it is not astonishing that some horses hang back when first taken out, and if they are predisposed become balkers. The high-couraged horse, though he may hesitate at first, will, as soon as the part becomes numbed with pressure, or he becomes desperate with the pain he is suffering, begin to pull and show evidence of the discomfort he is suffering in the many ways already described, such as crossing the jaws, going with the mouth open, head to one side, etc.

The irritable, sensitive horse is apt to manifest his pain in a more demonstrative manner, and we may find him going out of the stable with a rush, rear or plunge, and if he continues to do this for a short time it soon becomes a confirmed habit and a very dangerous and disagreeable one. Unfortunately it is by no means an uncommon one and could have been very easily prevented had it been realized that it was due to soreness of the mouth and rational measures adopted. Instead, however, of resting the mouth by keeping the bit out of it, the horse is used day after day and the condition aggravated.

If the excoriated parts heal, the cicatricial tissue filling the breach gives rise to an uneven surface and the healed part remains unduly sensitive, and the pressure of the bit always causes evidence of discomfort. Some refer to the healed part as calloused and lacking in sensitiveness, and so account for some horses having a one-sided mouth, but personally I think it is the healed part that is the sensitive one.

Just here I may remark that I think this is a point that should not be ignored by the veterinarian in examining for soundness, and should at least be pointed out to his client, and its consequences explained; the more so if any injury to the bone has ever taken place, for then a horse can never have a good mouth.

Outside of the discomfort and difficulty of driving a horse with a bad mouth not to say the danger especially in crowded streets, and the unsightliness of carriage, it gives rise to, as in turning the head in and out, etc., a bad mouth is apt to produce irregularity of the gait and impaired control of the legs. What is called "hitching" or hopping, generally of a hind leg, although due to weakness, too heavy a load, driving beyond speed, heavy shoes, etc., is not infrequently due to tenderness or soreness of the mouth, or placing the bit too high in the mouth. There is no such thing as a congenital "hitcher." It is always the result of bad management if allowed to become a habit.

In high couraged horses whose mouths have become permanently injured from the bit, it is a difficult matter to overcome the habit, but if the mouth is allowed to heal thoroughly, the bit placed as low in it as the animal will stand and face it with a moderate degree of firmness and not put his tongue over it, the fault will often be remedied.

The veterinarian needs to be on the alert for seeming lameness from a sore mouth, which is by no means uncommon. A horse will nod his head or hitch on a hind leg as rhythmically as if he were actually lame, and owners and coachmen often jump at the conclusion that such is the case, neglecting to take the precaution to jog a horse in hand, before coming to the conclusion. In fact, it is very difficult to persuade people sometimes that a horse is not lame when he nods or hitches from a sore

mouth. I have known horses to go apparently lame when driven with a certain kind of bit, that would go naturally with another kind, and I have also known horses to go seemingly lame when driven on one side in a pair, that would show nothing irregular when driven on the other side. One is more apt to have an experience of this kind with green horses that are being trained to a curb bit, than with those that are seasoned, unless their mouths have been permanently injured, and those driven in double harness are more apt to show it than those used in single harness.

In standing about show and sale rings one frequently hears horses condemned as being lame when it is due to soreness of the mouth, the tendency to which is increased by going around a small ring.

Mixing is usually attributed to want of balance from a proper distribution of weight in shoeing, and no doubt this is the case in some instances, but I think the cause should be more frequently referred to the mouth. You will generally find a horse that is inclined to mix has an unsteady mouth. He does not take the bit with the necessary firmness and keeps retracting his tongue or putting his tongue over the bit so that the pressure from the bit comes on the branches of the lower jaw, which always give rise to irritability and a want of confidence in the animal's manner of going.

The tendency to mix can usually be overcome by patient and persevering effort to get the tongue accustomed to pressure. The bit should be placed well up in the mouth and be as comfortable a one as possible. Sometimes a bit with a flexible rubber mouth piece or an arched stiff one. Leaving the bit in the mouth in the stable for several hours daily so as to get the tongue used to its pressure and so that it will remain quietly under the bit, apply gradually increasiug pressure from day to day by means of a dumb jockey. Sometimes a bit with a port will remedy the trouble at once, but as a rule the former plan is the best. Carelessness in the position in which the bit is placed in the mouth, often results in injury to that organ. It is a point that a driver should exercise as much vigilance about, with almost as much care, as determining whether the reins are buckled to the bit.

The lower the bit is placed in the mouth within certain limits, the better, providing the horse will take it, with a moderate degree of firmness, keep his head steady and his tongue under it. In those horses, however, which do not force the bit steadily, it is usually better to raise it in the mouth and as their mouth becomes firmer lower it.

Among the exciting causes of "interfering," soreness of the mouth is by no means an uncommon one, and I have frequently observed it occurring even in well-broken horses, when a change of bit, particularly to a severe one, had produced some injury to the mouth. Fatigue, bad shoeing, rough and slippery roads, the swaying of a heavy two-wheeler, are all exciting causes of "striking" or "brushing," but I am of the opinion that the awkwardness arising from an inperfectly made (not thoroughly bitted) mouth, with the incidental soreness, is an important factor.

Dr. Grenside's paper was freely discussed, Drs. Bell, J. S. Cattanach and Ackerman, leading in the discussion. At the close of the discussion, motion for a vote of thanks to be ten-

dered to Dr. Grenside for his paper was made by Dr. O'Shea. Seconded and carried.

Dr. E. B. Ackerman then read a paper entitled "Municipal versus State Control of Tuberculosis." * Dr. Ackerman's paper opened a field for discussion, which was led by Dr. Gill, and participated in by Drs. Bell, Hanson and others.

Moved and seconded, that a vote of thanks be extended to Dr. Ackerman. Carried.

Report of Ways and Means Committee.—Dr. Bell (Chairman) reported that he had furnished two excellent papers for the present meeting, as was evidenced by their reading, and had one promised for the December meeting and would secure a second one from among the members. Moved and seconded that the report be accepted. Carried.

Death of Dr. Machan.—Moved and seconded that a committee be appointed to draft resolutions on the death of our late member Dr. Machan, with an amendment that Dr. Robertson be included in that committee. Carried. The president appointed the following committee to act in that capacity: Drs. H. D. Hanson (Chairman), Jas. L. Robertson and J. Elmer Ryder.

New Business.—Dr. Gill raised the question of the U. S. V. M. A. holding its next meeting in New York City. After some discussion, it was regularly moved and seconded that the Secretary be instructed to notify the Chairman of the Executive Committee of the National body, that it was the sense of this meeting, that the U. S. V. M. A. be invited to hold their next annual meeting in New York City. Moved by Dr. Gill that the vote be made unanimous. Seconded. Carried.

Moved by Dr. Hanson, that the Secretary, in conjunction with the Ways and Means Committee, get up a circular letter to enthuse a full attendance at the annual meeting, the yearly announcement of each member's indebtedness to the association to accompany the letter. Seconded. Carried.

Moved and seconded, that the meeting adjourn. Carried.

ROBERT W. ELLIS, D. V. S., *Secretary.*

CHICAGO VETERINARY SOCIETY.

The regular monthly meeting was held November 10th. President Robertson presided, and the following visitors and about twenty members were present: Drs. Boyd, Baldwin,

* Will be published in an early issue of the REVIEW.

Walter Howe and L. Enos Day. Dr. H. D. Paxson, U. of Pa., 1893, was admitted to membership. Owing to disagreeable weather many refrained from attending.

The papers expected from Dr. Joseph Hughes, "Cases Met with in Practice," and "Reports of Cases," by Dr. John F. Ryan, were not presented. Our disappointment was due in both instances to illness of the gentlemen mentioned. Expressions of disappointment and regret were general, as both gentlemen handle their subjects in such a scholarly manner that much is to be gained from their papers. Matters were mended by Dr. L. A. Merillat's response to President Robertson's call for a *résumé* of his paper on the action of eserine, read before the U. S. V. M. A., which brought forth a spirited discussion, including many other topics, of which the following is a synopsis:

Dr. Merillat:—During the past winter Dr. Reading and myself made several experiments on dogs at the McKillip Veterinary College for the purpose of ascertaining the action of eserine. Eserine is an alkaloid and is described as a stimulant of the muscles of the bowels and, in fact, all muscular tissue. Through these experiments, however, we have shown that the action of eserine was purely upon the nerve centres and that instead of being a stimulant to the muscular coat of the bowels it is no more than a depressant to the nerve centres. Eserine depresses or paralyzes the nerves which stop the bowels, the inhibitory nerves, and by doing so rapidly empties them. In experimenting on horses that have paralyzed bowels we found that eserine was not active, but that it will act on the colon when there is marked peristalsis. I may also mention the new treatment for acute indigestion recommended by Professor Bell. Dr. Bell read a paper on acute indigestion at the recent meeting of the U. S. V. M. A. that is probably the best ever written on the subject. His treatment is very simple and consists of the administration of large amounts of dry animal charcoal. It is well known to the chemist that charcoal will absorb about 400 times its volume of gas. Therefore a great amount of charcoal, say eight or ten ounces, is administered dry, and will rapidly absorb any gas in the stomach. Dr. Bell reports great success in cases of acute indigestion by such treatment. He emphasizes the fact that if you wish to get any benefit from this treatment the charcoal must be administered dry, and in combination with sodium bicarbonate. You may combine other treatment, as the administration of the charcoal does not in any way interfere

with other agents used for the same condition. I think it is certainly a treatment that every city practitioner should try.

Dr. Campbell:—It seems to me that as soon as the capsule in which the charcoal is administered gets wet, the charcoal gets wet also, and it would not have the desired effect.

Dr. Merillat:—As charcoal absorbs 400 times its volume of gas, as stated before, one ounce would be enough to have the desired effect if it did not moisten in the stomach, but instead he administers a much larger amount, so that while a portion of it gets moist, the balance remains dry and absorbs the gas.

Dr. Quitman:—Regarding the action of eserine, I am very much pleased to hear of the experiments that Dr. Merillat has made, inasmuch as it bears out my idea from a theoretical standpoint. We know that some drugs have the power of paralyzing the inhibitory without paralyzing the motor nerves. I worked it out in the same way. In regard to its indications and use, I would dislike very much to be without it, as I am usually successful with it. We have to select our cases. To administer it where there is paralysis of the bowels seems useless. Sometimes you get good action even then by giving it in small repeated doses. I get eserine in one and a half grain sealed tubes. It becomes moist on instant exposure, therefore I buy it in one-dose tubes, so as to keep it fresh. The tablets, I think, are worthless, because such a drug cannot be entirely protected from the atmospheric moisture.

Dr. Hawley:—This discussion recalls to my mind a certain case, and it does not bear out the theory of Doctors Merillat or Quitman. In 1891, while I was assistant to Dr Hughes at the Chicago Veterinary College, a horse, weighing about 1200 pounds, was brought to the college. It was apparently a case of ordinary impaction. I do not remember all of the treatment, but I do remember that he received first a pint of linseed oil, and this was followed by half a pint every four hours for eleven days. Dr. Hughes was at that time very much opposed to my administering eserine, but he finally consented. A grain and a half of eserine was injected hypodermically and we had a violent action of the bowels, presumably one-half bushel of fæces, and the horse finally recovered.

Dr. Merillat:—I think this is a nice case that demonstrates the theory of Dr. Quitman's and myself. Dr. Hughes probably had the horse in a good condition to get the action of eserine. The treatment Dr. Hughes had given previously

was just commencing to take action on the bowels, and the administration of eserine had the desired effect.

Dr. Campbell:—I had a similar case to Dr. Hawley's, but after administering eserine, although it had very violent action, the horse died.

Dr. Quitman:—That recalls to my mind a case I had some time ago. It apparently seemed to be an ordinary case of colic. A colic drench and purgative ball were administered without any good effect. The sounds in the bowels were normal. I repeated the purgative, gave injection of eserine, and there was absolutely no result until the fourteenth day, when the horse passed four pellets. I did not know what else to do, and we came to the conclusion that there was an intestinal obstruction, and I advised the owner to turn the horse out. On the thirty-first day enteritis set in and the horse died. I went out to the country and held a post-mortem and I found a calculus that weighed about one pound and two ounces, round in shape, and the pouch in which it was developing very much thickened. It was located about two feet back of the commencement of the single colon. Another peculiar feature I noticed was that the digesting portion of the stomach was atrophied and looked like parchment. Of course, cases where there is obstruction of the bowels cannot be helped by eserine. I also have a case of lameness that I would like to have some one to help me out on. She is a driving mare, and starts out apparently well and after she is driven five or six miles and is turned around for home she starts to go lame, then suddenly goes sound again. It is in the off front leg. She had been going that way for five or six days when they asked me to examine the animal. I examined the leg in question, taking the owner's word for it, as he is a very good horseman, as to which leg she was lame in. I rode behind the mare and drove her about eight miles and let her stand quite awhile, but could not discern any lameness. I prescribed an ointment of cocaine and morphine, dissolved in oleic acid, and mixed with oleate of mercury and lanolin, but this did not overcome the lameness. I have not seen the mare since, but I know the owner speaks the truth, because he is not a man to jest. Now, I do not know what to make of it. I am handicapped somewhat in not seeing the mare lame. All I noticed when I drove and examined her was what seemed to be a small splint.

Dr. Merillat:—How long had these symptoms been manifested?

Dr. Quitman :—Just about four weeks.

Dr. Hawley :—I would like to ask some questions in regard to neurotomy. How long does an animal usually go sound after being operated upon ?

Dr. Quitman :—I know a case that went sound for seven years.

Dr. Campbell :—I know one of six years.

Dr. Allen :—I know one that I operated upon, high operation, ten years ago, and he is sound to-day.

Dr. Merillat :—The length of relief from the operation depends, in my opinion, upon the work that they have to do afterwards. The average in lower plantar operation is two years. High neurectomy for navicular disease is an operation that I would recommend only as a last resort, as the danger is too great, though in many cases it proves successful. Meso-neurotomy is very effectual in tendonitis. In all such cases it gives prompt relief and often completely straightens the tendon. Another operation that is effectual in spavin is posterior tibial neurectomy. It is a sure relief to ringbone, where there is no mechanical obstruction. All these neurectomies require a little courage, but I think we would advance our profession a great deal if they were universally adopted.

Dr. Allen :—I am much in favor of the high operation. In about ten years that I have been in active practice I have performed three or four of the lower and about seventy of the higher operations, and I have yet to lose my first case. As to the posterior tibial neurectomy for ringbone, I always do the high operation with very good results. I know one case that I operated upon that had a large ringbone that at the present time has entirely disappeared, but I cannot see why you should go as far as posterior tibial neurectomy for ringbone if the high operation is just as successful.

Dr. Quitman :—In recent cases I perform the low ; in cases of old standing, especially where inflammation sets in, I perform the high operation.

Dr. Merillat :—For all cases of navicular disease we perform the low operation, and if the results are not satisfactory we perform the high. If you can cure it by the low operation it is certainly better, but if you cannot perform the high.

Dr. Hawley :—In absolute navicular arthritis I do not see the sense of performing the high operation.

Dr. E. L. Quitman now related a case of "Calcification of Parotid Gland and Steno's Duct," after which the discussion

was closed and the following papers were announced for the December meeting: Dr. H. W. Hawley, "Lameness on Leading Out;" also "Vices, and their Relation to Soundness." Dr. A. M. Casper, "Temperature and its Relation to Soundness."

JOS. B. CLANCY, *Secretary.*

MISSOURI VALLEY VETERINARY ASSOCIATION.

The seventeenth regular meeting of this association convened in the lecture hall of the Kansas City Veterinary College on the evening of October 5, 1898. President Bennett presided. On roll-call the following members responded: Drs. S. E. Bennett, S. Stewart, J. H. Cock, B. F. Kaupp, J. C. Milnes, R. P. Steddom, S. L. Hunter, R. C. Moore, W. A. Heck and Chas. Saunders. Visiting veterinarians: Drs. H. H. George, J. D. Buckley and about twenty veterinary students.

The customary disposition was made of the minutes of the previous meeting. The report of the Anti-Vivisection Bill was accepted and committee discharged.

Dr. L. M. Klutt's request for associate membership was refused upon the grounds that he had resigned from the association some years since while in arrears for dues; also that the letter-head upon which the request was written contained the cut of a horse's head, which is a violation of the code of ethics of this association.

Circumstances within the past few months have been the means of removing several of our members from our territory. Dr. G. A. Johnson, of Sioux City, Iowa; Dr. R. H. Harrison, of Milwaukee, Wis., and Dr. Nelson S. Mayo, of Storrs, Conn. Each sent in his resignation; the Secretary reported them with clean accounts, and their resignations were accepted, and they were placed upon the honorary list.

The Secretary reported collections improved, but still some delinquents. The usual amount of discussion of this subject was done, and finally instruction was given the Secretary to notify each individual in arrears two years or more that unless his account is settled by the next regular meeting final action will be taken.

Dr. S. L. Hunter read a paper on "Army Practice," which was listened to with much interest. He added another chapter to the very thorough but much needed airing of the condition of the army veterinarian.

Dr. J. C. Milnes responded to the theme "The Reason Why." He described the outbreak of anthrax in two herds of horses.

The origin he thought was in heaps of manure under the barns in each instance. Then followed some spirited but good-natured criticisms of the author's theories, questioning somewhat the diagnosis. In defense the author went carefully over the train of symptoms and post-mortem lesions; he had been in practice since 1878, and had seen much anthrax, and felt justified in making a diagnosis of anthrax. Those who took the negative side of the question went into the bacteriological aspect of the disease and stated that even a microscopical examination will not always substantiate a suspicion.

Dr. B. F. Kaupp read a carefully prepared paper on "Calculi," going into their construction and formation, supplementing his remarks by the exhibition of a fine collection.

Dr. Cook created considerable merriment by relating the story of the Irishman who insisted that calculi are contagious.

Dr. Hunter cited a case where a leather shoe-string was extracted from the bladder of an old man; the patient could not explain how it came there.

Dr. Stewart's paper on "The Advantages of Active Membership in a Veterinary Association" was well received. The author is one of the most capable of our modern veterinarians, and anything from his pen is always first-class.

Dr. Moore reported several cases: *Case No. 1.*—A bull's penis was injured in some unknown manner, not bad at first, but soon grew to be alarming; tissues adjacent swelled and finally sloughing of the parts took place. Patient was ordered destroyed. Some one suggested the cause might be snake-bite. Symptoms of snake bites were thoroughly discussed. *Case No. 2.*—Gangrenous dermatitis in a horse. Had seen several cases in past few years, all of which proved fatal.

One of the interesting features of the meeting was the exhibition of a new thermo-cautery, an invention of one of our own members, which for simplicity and cheapness has no equal. It is so constructed that the operator can hold it all in one hand and pump it while in use. Its cost is not more than five dollars.

By a vote of the association it was agreed to hold the next meeting in St. Joseph, Mo.

W. A. HECK, D. V. M., *Secretary.*

TENNESSEE VETERINARY MEDICAL ASSOCIATION.

The third annual meeting was held in Chattanooga, Monday, October 24, 1898. The President, Dr. Jos. M. Good, occupied the chair, and in his introductory remarks touched briefly on

several subjects of importance to the veterinarians of the State and showed that matters pertaining to the veterinary profession in Tennessee were slowly taking on a brighter aspect.

On roll-call the following members answered to their names: Drs. Jos. E. Good, H. D. Fenimore, J. W. Scheibler, T. W. Scott, G. B. Blackman, W. C. Rayen, G. R. White and Jos. Plaskett. The attendance, considering the limited number of qualified men in the State, was very gratifying, and showed that the members take an active interest in the association.

The Committee on Legislation presented a report stating that at the coming meeting of the State Legislature a powerful effort would be made to obtain the passage of a bill regulating the practice of veterinary medicine and surgery in the State of Tennessee. This bill will be along the lines of those adopted in the Eastern States requiring practitioners to register, and compelling new comers to pass the examination of a State examining board appointed by the Governor from members of the Tenn. V. M. A.; non-graduates who have been practising for five consecutive years in the State will be allowed the privilege of registering and continuing their practice. The report was adopted.

The Committee on Resolutions presented a report deploring the fact that the cities of Memphis, Chattanooga and Knoxville have no system of meat and milk inspection under the direction of a qualified veterinarian and pointing out the dangers which threaten the lives of their citizens from allowing such a condition of affairs to exist. Allusion was also made to the deplorable status of the veterinary profession in the United States army, and it was resolved that the Tenn. V. M. A. do earnestly cooperate with the Legislative Committee of the American V. M. A. in its efforts to obtain recognition of, and commission for, the army veterinarian. The report was adopted.

The President then called on Dr. Blackman, who responded with a thoughtful and well prepared paper on the subject of "Veterinarians as Sanitarians." All the members joined in the discussion which followed, and it proved to be an interesting and instructive topic.

He was followed by Dr. White, whose subject was "Municipal Meat Inspection." Dr. White's position as meat inspector for the city of Nashville enabled him to handle the subject in a practical and competent manner, and he plainly illustrated the benefits arising from, and the necessity for, a system of inspection in all the larger towns of the State.

Dr. Plaskett came next, with a paper on "Trismus in Horses," * a disease which does not appear to be described in the text books on veterinary literature. It is quite prevalent throughout the South, and in the discussion which followed every member had something to say on the subject in some of its aspects.

Dr. Fenimore followed, with an informal talk on the subject of "Vilde und Rinderseuche." He described an outbreak which had occurred on the State Farm at Knoxville, and the difficulty which had been experienced in properly diagnosing it. He described the symptoms, attempts at treatment, etc., and for fuller information referred the members to the paper which he had prepared, and which was read at the annual meeting of the National Association.

The election of officers resulted as follows: President, Dr. H. D. Fenimore; First Vice-President, Dr. T. W. Scott; Second Vice-President, Dr. R. E. Collins; Treasurer, Dr. G. B. Blackman; Secretary, Dr. Jos. Plaskett.

The time and place of the next meeting was left to the Executive Committee, and there being no other business the meeting adjourned. JOS. PLASKETT, D. V. S., *Secretary.*

VETERINARY MEDICAL SOCIETY, UNIVERSITY OF PENNSYLVANIA.

The first meeting of the year was held October 14, at 8 o'clock. The Secretary, Mr. Jacobs, called the meeting to order and Mr. Nolan was appointed Secretary *pro tem.* Mr. Hoopes was made critic.

The names of Messrs. Kerns, Tallman, Mayer, Young, Bader, Walter, Watson and Gilliland were proposed and duly elected to membership. The following gentlemen were elected as officers: Mr. Jacobs, President; Mr. Taylor, Vice-President; Mr. Hoopes, Treasurer; Mr. Nolan, Secretary, and Mr. Hughes, Librarian. Executive Committee: Messrs. Kerns, Corman, Tallman and Bader.

Meeting adjourned at 9.15 P. M.

Second meeting was held October 21, at 8 o'clock. The society was called to order by President Jacobs. Mr. Young was appointed critic. The names of Messrs. Powell, Dunn and Shore were proposed and duly elected to membership.

Prof. Leonard Pearson then gave an interesting, likewise

* Will be published in an early issue of the REVIEW.

instructive, address on the "Conformation of the Horse." A vote of thanks was extended to Prof. Pearson for his eloquent address.

Meeting adjourned at 9.30 P. M.

The third meeting was held November 4, at 8 o'clock. The society was called to order by President Jacobs. Mr. Kerns was appointed critic. The names of Messrs. Colton, Woodward, Bender, Norton and Willett were proposed and duly elected to membership.

Literary programme was as follows: A paper by Mr. Hoopes on "The Male Animals in the Stud."

Debate: *Resolved*, That a veterinarian should not have his office at a livery stable.

Affirmative: Messrs. Cheney, Young and Walter. Negative: Messrs. Keiter, Hughes and Gilliland. The subject was ably handled by the gentlemen on the debate, likewise by the members in general. The negative side was victorious. The President thanked the members very kindly for their interest in the society, and asked them to continue in this line.

Meeting adjourned at 9.30 P. M.

L. A. NOLAN, *Secretary.*

NEWS AND ITEMS.

THE MCKILLIP VETERINARY COLLEGE has forty-two students this session.

DR. WM. MCLEAN (O. V. C. '82), of Portland, Oregon, was appointed State Veterinarian by Gov. Lord, October 1st.

DR. R. H. HARRISON, formerly at Kansas City, is now with the Bureau of Animal Industry in charge of meat inspection at Milwaukee, Wis.

DRS. J. E. CLOUD, of Richmond, Ind.; Geo. P. Statter, Sioux City, Ia.; James Nicholson, Pipestone, Minn., and A. P. Hopkins, of Ames, Ia., are among the post-graduate students of the McKillip Veterinary College.

THE ANNUAL DUES of members of the American Veterinary Medical Association were reduced at the last meeting from $5 to $3. Those who had paid the former amount for 1899 will be credited by $2 for the year 1900.

DOGS AND CATS POUND IN PARIS.—724 dogs and 44 cats

were sent to the public pound (fourrière) during the year 1897. From ante and post-mortem inspection of those animals, 105 cases of canine and 14 of feline rabies were observed.

A FREAK PIG.—Dr. G. A. Clark, of this city, shows a curiosity in the shape of an elephant pig. The animal was born last April on the farm of E. J. Chamberlain at Stoughton, Mass. The head, in every feature, bears resemblance to that of an elephant.—[*Manchester (N. H.) Union.*]

A VETERINARIAN ELECTED CORONER.—On November 8, 1898, Dr. E. C. Porter, V. S., of New Castle, Pa., was elected Coroner of Lawrence County by an overwhelming majority, having 650 more votes than any of the other Republican candidates. The veterinarians of Lawrence County stick together like pine tar to a mustang. E. E. B.

LIKES THE REVIEW.—Dr. G. R. Young, of Omaha, Neb., under date of Nov. 15, says: "I am well pleased with the REVIEW, and wonder why I have not always subscribed for it." Many others would feel the same way if they were familiar with it. Why don't you tell your veterinary colleague what he is losing? It will do you both good.

DR. NELSON P. HINKLEY, of Buffalo, N. Y., has resigned his position as one of the New York State Veterinary Examining Board, which with that of Dr. Huidekoper makes two vacancies upon the Board. This will necessitate the appointment of both Drs. George H. Berns and W. L. Baker, who were nominated at the last meeting of the State Society.

CANDIDATES for the 1899 meeting of the American Veterinary Medical Association are New York City, Baltimore, and Detroit. We predict that New York will win, and as the State Association resolved to meet in conjunction with the National Association should it come to New York, there is every prospect of a grand gathering in the last year of the nineteenth century.

THE SERUMS IN PRACTICAL USE IN CHICAGO.—Veterinary practitioners of Chicago are using tetanus antitoxin quite extensively following nail wounds, especially in those cases kept in stables known to be infected with tetanus bacilli, with the best of results. Some very good results are also noted following the injection of streptococcus antitoxin in purpura hæmorrhagica.

RECOGNITION OF TICK DIPPING.—The Illinois Board of Live-Stock Commissioners has amended its quarantine regulations so as to admit cattle from the scheduled districts on pre-

sentation of certificates from an agent of the Bureau of Animal Industry or of the Illinois Board of Live-Stock Commissioners that they have been dipped in accordance with the formula prescribed by the Bureau of Animal Industry.

A HORSE LIVES 32 DAYS WITHOUT FOOD OR WATER.—A Nevada, Mo., despatch dated October 25, said: "A remarkable case of long life without food or drink has developed here when a horse supposed to have been stolen from W. T. Letton of this county on the night of September 25, was found alive in one of the stalls at the fair grounds. When found it had eaten all the pine timber within reach and was still able to walk. It had subsisted thirty days without food or drink."

Dr. T. W. SCOTT, formerly of Nashville, but now of Clarksville, Tenn., who will be remembered for his good fellowship and geniality toward the visiting members at the Nashville meeting of the U. S. V. M. A., has recently taken unto himself a bride in the person of a lovely and estimable young lady of Clarksville. Dr. Scott is conducting a large veterinary infirmary and shoeing shop and has won for himself a host of friends, and we wish him success both in his business and matrimonial ventures.

COULDN'T DO WITHOUT THE REVIEW.—Joseph Plaskett, D. V. S., Secretary Tennessee Veterinary Medical Association, writes under date of Nov. 18th: "I do not see how I could do without the REVIEW now. Best wishes for its continued success." This is given chiefly as a specimen of what hundreds would write if they were only induced to subscribe. Reader, have you told your brother practitioner of the many valuable things you get from the REVIEW, and that the small subscription fee is more than returned to you in every issue? Begin now.

ANSWER TO A CORRESPONDENT.—*Harrisburg, Pa., Nov. 15, 1898.*—A dispute has arisen in this town between some quacks and myself, they claiming that the operation of neurotomy is cruelty to animals, while I claim it is not if done properly by a qualified veterinary surgeon, when all other treatment has failed to relieve navicular disease. Please give your opinion. J. A. Haas, V. S., 112 Locust St. *Answer.*—If the patient be a proper subject for the operation, we do not consider it a cruelty; but a necessary procedure to relieve pain and render a worthless animal a more useful servant of man.—EDITOR.

SIX ONE WAY AND HALF A DOZEN THE OTHER.—The

high duties and various restrictions placed by Germany on our export meats have nearly stopped the shipment of animals on the hoof and greatly increased the price of meats to the consumer. This advance has been so sharp that consumption has fallen off in a marked degree and the population has turned toward cured meats. This is peculiarly advantageous to us, as we control a large part of that trade. It would thus appear that the agrarians whose efforts have brought about these restrictions have effectually "whip-sawed" themselves.—(*Breeder's Gazette.*)

How the Horses were Gotten Ashore at Siboney, Cuba.—The landing of horses at Siboney from the American transports was a work attended with a good deal of risk. It was impossible to land the animals without making them swim ashore, and great difficulty was experienced in getting them into the water. The method pursued was ingenious, to say the least. The horse was made to stand on a board at the side of the vessel, and a rope from his halter was thrown to a boat alongside. The board worked on a pivot in the middle, and shot the horse, very much surprised, into the water. When two had been served thus they were towed off towards the shore by a boat's crew. It was a half-mile swim to the shore, through a choppy sea, and many of the horses only landed to die in a few days. Some of them would get into the sea without being roped, or get loose when in the water, and with provoking stupidity would start swimming out to sea. Some of them were recaptured, but others were washed away.

A New Treatment for Bursatte.—In a private letter from Prof. W. L. Williams the following interesting paragraph occurred, and as it is of professional interest we take the liberty of reproducing it: "I tried during the past summer a very interesting experiment in the treatment of bursatte (summer sores). Knowing that the sores develop only in hot weather and the two cases belonging to our clients being affected entirely on the legs and feet I reasoned that keeping these parts cool and free from irritation might be beneficial. I therefore directed that the feet and legs be not groomed at all during the heated term, but instead that they be showered with cold water (from city hose) twice daily. As a result, of the two patients which had each summer previously become unusable during the hot weather, one passed through without an eruption, the other showed five or six slight eruptions which yielded promptly to silver nitrate, iodoform and pressure. Of course the experiment is limited, as

we are too far north to see much of the disease. I wish REVIEW readers living farther south might try this simple expedient."

RESULTS OF THE OMAHA CLINICS.—It will be interesting to those who witnessed the operations at Omaha to know the results in the various cases, as to the private surgeon the results are the greatest *desideratum*. Dr. G. R. Young, of Omaha, whom all remember through his many courtesies as a member of the local committee of arrangements, writes the REVIEW under date of Nov. 15th, as follows: "Our clinical cases held here all turned out well with the exception of the first cryptorchid. I believe Dr. Peters is using the little black mare that was operated upon by Dr. Williams [vaginal ovariotomy] for general purposes. The gelding on which Dr. Merillat operated [arytenoideraphy] has done remarkably well—gained in flesh and is driving well. There was no perceptible improvement in the second subject that Dr. Lyford operated upon, and I have since fired and blistered the tendons. I heard this morning that he is slightly lame yet. I attribute the saving of the bitch on which ovariotomy was performed by Dr. Vincent due to the care and treatment that it received from the hands of Mrs. Young."

CALIFORNIA SEEKS VETERINARY GUIDANCE—DR. ARCHIBALD SELECTED.—At an adjourned meeting of the State Board of Health, in the Palace Hotel, San Francisco, last evening, the subject of anthrax and Texas fever among cattle in California was considered and also a report from Dr. D. D. Crowley relative to his visit to Secretary Wilson, of Washington, D. C., concerning the best methods of eradicating both contagious and infectious diseases among the cattle of the State. Dr. Crowley reported that Mr. Wilson considered the best method of accomplishing this end would be by appointing a first-class veterinary surgeon to make an investigation throughout the State and report from time to time to the State Board. This veterinary surgeon should work in conjunction with the federal investigators. By such energetic work Dr. Crowley believed the district now quarantined in California might be greatly decreased. Upon Dr. Crowley's motion, it was determined to act upon Mr. Wilson's suggestion, and as a consequence Dr. Archibald, of this city, was elected. He is to receive a salary and all expenses, subject to the approval of the Governor. Dr. Archibald is President of the State Veterinary Society and is at present doing scientific work for the Oakland Board of Health. This is the second person from Oakland, who, through Dr. Crowley's efforts, has been

recognized by the State Board of Health.—(*Oakland, Cal., Tribune, Oct. 19.*)

A MONUMENTAL LIAR.—Even the giving of names, dates and places will not save the hero of the following story from reaching his proper position as an asinine prevaricator, whose clumsy recital in the New York *Evening World* is not worthy of a place in a scientific journal except as an exhibition of the imposition practiced upon the lay public by the extravagant stories of "existing practitioners": "East New York has another nine days' wonder. This time, although the incident is local, the people out there are talking of an event which will interest veterinarians from one end of the globe to the other. A week ago, a man up in a hay-loft over the stable of William Fiesler, at Blake and Rockaway avenues, slipped and fell head first into the hole over one of the stalls through which hay is dropped for the horses. When the man fell a silver watch and four pennies dropped from his vest pocket. When he got down to the stable watch and coins were missing. There was no one else around and so it was decided that a powerful bay horse had swallowed them with his fodder. The local veterinarian, Dr. George A. Crowin, was called in, and after listening to the strange story removed the horse to his hospital at Vermont and Jamaica avenues. The big beast was placed under a powerful drug and strapped to the floor. With much care, a piece of flesh in the shape of a lid about six inches square was cut away from his stomach. Predictions proved correct. The horse had swallowed the watch and the pennies, as well as a blanket pin, which had turned black. The watch had stopped an hour after being swallowed. After the things had been removed the lid in the animal's stomach was sewed up and restoratives applied. From Thursday last until yesterday the horse continued as a patient at the hospital. Yesterday, however, he was taken to Patchogue to fully recuperate."

THE POPULARITY OF THE HORSE.—To the pessimists who have been preserving equine skeletons so that they might have a real curiosity when the horse became extinct, we commend the following item from an elaborate account of the late New York Horse Show, in the *Herald* of November 19: "Now that the Horse Show is nearing its end there are several points which have been established this season that are of especial interest. First of all, the lasting popularity of the horse. We have heard much about the passing of this beast, and have come to believe, some of us, that what with bicycles

and horseless carriages and electric cars and all the modern modes of conveyance, that the horse might soon disappear from the haunts of men. Ask the directors of the Horse Show and they will tell that, far from losing favor, the horse is growing in men's and women's fancy, and that there is more riding and driving now than ever, and greater attention paid to quality and character of horses and appointments. This has been shown at the Horse Show this season. In point of quality of horses and perfection of appointment the display has far exceeded those of former years. The Horse Show folk take much of the credit of this to themselves. They say their annual exhibitions have served as an educator. At all events, they hold that the marked improvement is conclusive proof of the increasing popularity of the horse and all that pertains to him. Notably is this extending fondness for horses marked among women and shown in growing numbers of those who have taken to the saddle. Directors of riding academies who have been about the Garden say that they have had an unprecedented demand for women's saddle horses in the last six months. They attribute this to the bicycle. Wheeling, they argued, taught women the delight of activity out of doors, and now that many of them have found certain objections to the wheel they have turned to horseback riding as a substitute, and rejoice in the exchange. Still, on the lessons of the Horse Show the managers point with exultation to the hold it retains on society, and reviewing the week and the attendance day and night they are twitting those who a few days ago were predicting that fashion was withdrawing its favor from the show. This gloomy foreboding was based on the comparatively small prices paid for boxes this year, and led to the belief that the popularity of the exhibition was waning in the smart set. It rested with the show itself to develop the underlying reason for this failure of the old time demand for boxes."

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